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FIELD DATA COLLECTION REPORT BOSTON HARBOR PROJECT, MASSACHUSETTS

by

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DEPARTMENT OF THE ARMY

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US Army Corps
of Engineers



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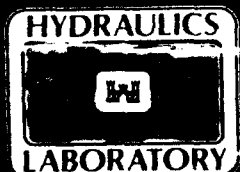


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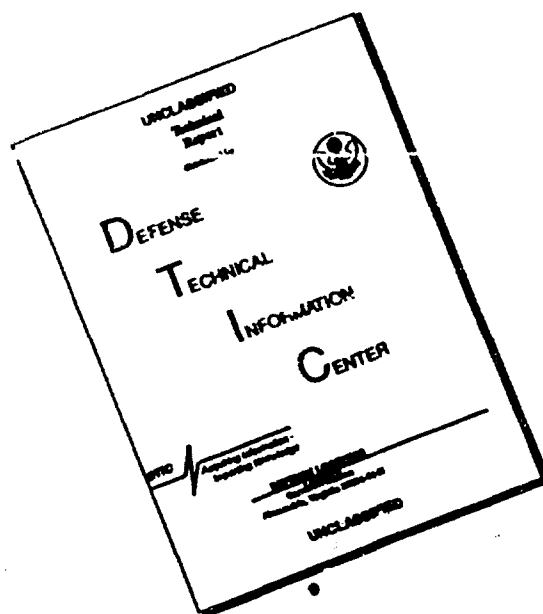
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13. ABSTRACT (Maximum 200 words) Water level, current speed, and current direction measurements were obtained in the Boston Harbor study area from 2 to 7 November 1990. The data were collected to provide information for use in numerical modeling of the Harbor to assess the hydrodynamic effects of the proposed changes to the navigation channel and for use in ship simulation studies. This report describes the equipment and procedures used in the data collection effort and presents tables and plots of the data.				
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PREFACE

The field investigation reported herein was conducted by the US Army Engineer Waterways Experiment Station (WES), Vicksburg, MS, during the period 2 to 7 November 1990 to provide the necessary data for support of the US Army Engineer Division, New England (NED), Boston Harbor Channel Improvement Project, Boston, MA. This effort was funded by NED, and liaison was maintained by Mr. Charles Wener of NED's Hydraulics and Water Quality Branch.

Personnel of the WES Hydraulics Laboratory (HL) Estuarine Processes Branch (EPB) performed the work under the general supervision of Messrs. Frank A. Herrmann, Jr., Chief, HL; Richard A. Sager, Assistant Chief, HL; William H. McAnally, Jr., Chief, Estuaries Division (ED); and George M. Fisackerly, Chief, EPB. The data collection program was designed by Messrs. Fisackerly and Timothy L. Fagerburg, EPB. Data reduction was performed by Ms. Clara J. Coleman and Messrs. Fagerburg and Joseph W. Parman, EPB. This report was prepared by Messrs. Fagerburg and Fisackerly and Ms. Coleman.

COL Larry B. Fulton, EN, was the Commander and Director of WES during the field investigation and data analysis. Dr. Robert W. Whalin was the Technical Director.

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CONVERSION FACTORS, NON-SI TO SI (METRIC)
UNITS OF MEASUREMENT

Non-SI units of measurements used in this report can be converted to SI (metric) units as follows:

<u>Multiply</u>	<u>By</u>	<u>To Obtain</u>
acres	4046.873	square metres
degrees (angle)	0.01745329	radians
feet	0.3048	metres
feet per second	0.3048	metres per second
inches	2.540	centimetres
miles (U.S. statute)	1.609347	kilometres
miles (U.S. nautical)	1.852	kilometres
pounds per square inch (absolute)	6894.757	pascals
square miles	2.589998	square kilometres
tons (short, 2000 lb)	907.1847	kilograms

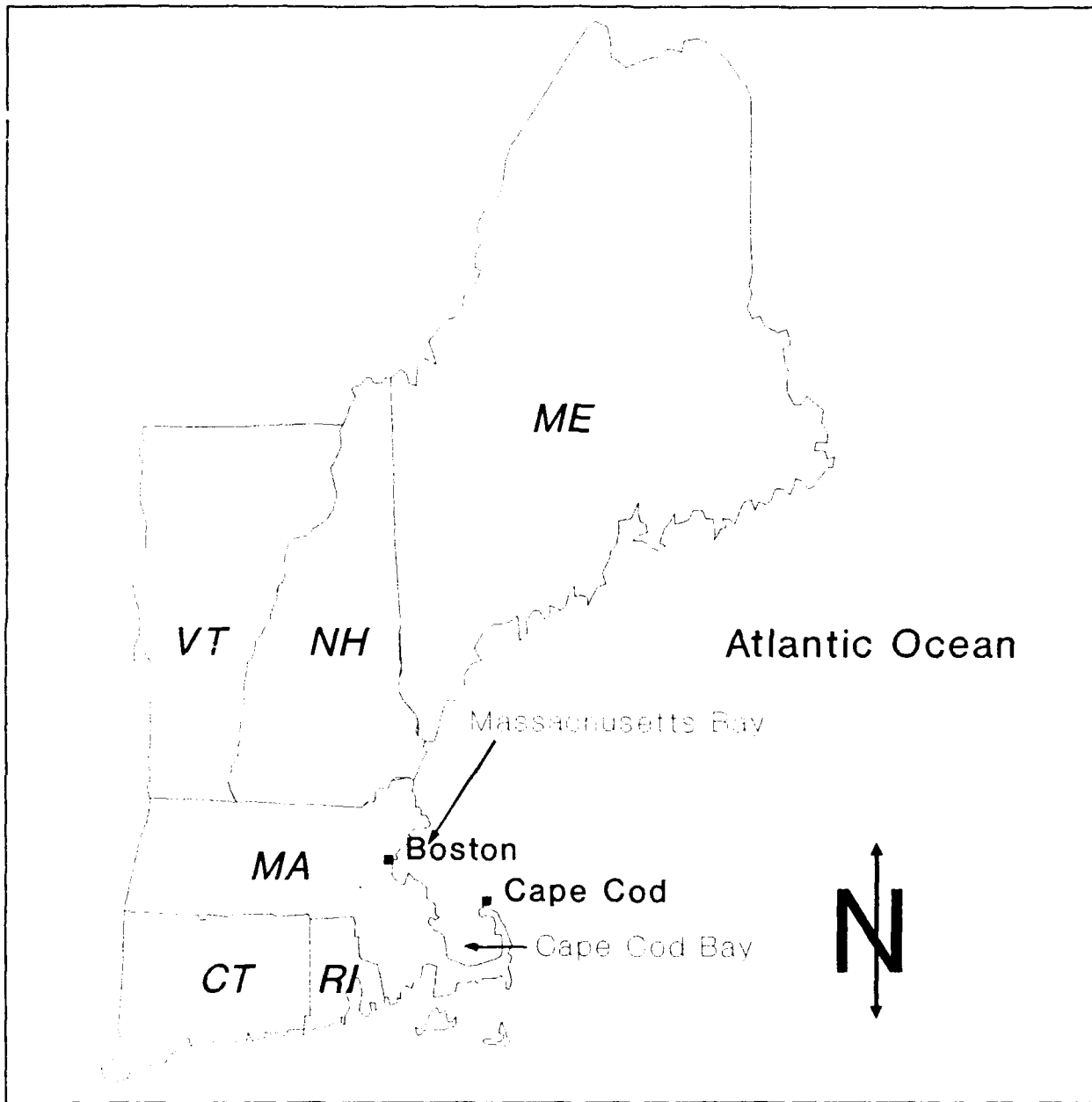


Figure 1. Vicinity map. Boston Harbor

FIELD DATA COLLECTION REPORT
BOSTON HARBOR PROJECT, MASSACHUSETTS

PART I: INTRODUCTION

Background

1. The Port of Boston is located on the western side of Massachusetts Bay approximately 50 nautical miles* northwest of the tip of Cape Cod (Figure 1). It is the largest port in New England, its water area covering approximately 47 square miles, and is one of the United States oldest and most historic international trading centers. A source of jobs and commerce for the 13 million residents of the six-State New England region, the port annually handles about 21 million tons of cargo worth more than \$7 billion. Of the tonnages handled in 1988 approximately 88 percent was liquid petroleum products and the remaining 12 percent was non-petroleum bulk, containerized, and non-bulk cargo.

2. The US Army Corps of Engineers has constructed navigation channels in Boston Harbor. Deepwater access from the Atlantic Ocean is provided by three entrance channels: the Broad Sound North Channel with two lanes at depths of 35 and 40 ft below mean low water (mlw);** the 30-ft-deep Broad Sound South Channel; and the 27-ft-deep Narrows Channel. The entrance channels converge in the naturally deep President Roads area where there is an anchorage of approximately 350 acres. Other deep-draft navigation projects serve facilities presently based along the Main Ship Channel and three major tributaries. The Main Ship Channel extends from President Roads to the interior of the harbor and has two lanes with depths of 35 and 40 ft. Each lane is 600 ft wide. The three major tributary channels are the Reserved Channel, the Mystic River, and the Chelsea River. The Reserved Channel is 1 mile long and 430 ft wide. The Mystic River Channel is 6500 ft long and varies in width from 580 to 1060 ft. The Chelsea River Channel is 2 miles long and varies in

* A table of factors for converting non-SI units of measurement to SI (metric) units is found on page 3.

** All depths and elevations (el) described in this report refer to local mean low water (mlw), which is 2.75 ft below National Geodetic Vertical Datum (NGVD).

width from 225 to 430 ft. All the tributary channels have been improved to a depth of 35 ft. Some problems associated with vessel navigation within the existing projects are related to the limited available channel depths. The existing 35-ft-channel depth in the three tributary channels requires the larger vessels to load light and wait in the bay anchorage for favorable tides, resulting in costly delays and fewer ships calling on the port. To remedy the problem, the following modifications have been proposed:

- a. Deepen the Mystic River Channel to 40 ft mlw.
- b. Deepen the Chelsea River Channel to 38 ft mlw.
- c. Deepen the Reserved Channel to 40 ft mlw.

Purpose

3. The purpose of the Boston Harbor field monitoring program was to provide synoptic data collection of water-level elevations (tides) as well as current speed and direction measurements at various stations throughout the system. The purpose of this report is to provide a permanent record of the instrumentation and techniques employed during the data collection survey and to make the data available for use in long-term numerical modeling studies and ship simulation studies.

Scope

4. This report presents representative results of the field data collection program in the Boston Harbor project during November 1990. Measurements consisted of the following:

- a. Water-level elevations at six locations.
- b. Current speed and direction at twelve ranges.

5. This report describes the field investigation methods used to collect the data, displays the results of the data reduction efforts, and summarizes the results of the data analysis.

PART II: DATA COLLECTION PROGRAM

6. Data were collected in the Boston Harbor study area from 2 to 7 November 1990. Water levels were recorded throughout the period. An intensive data collection program (a 14-hr survey conducted on 5 November 1990) was performed with the deployment of water-level recorders. During this intensive 14-hr data collection period current speed and direction measurements were obtained concurrently with the water-level elevation measurements. The data collection effort is described in subsequent sections of this report.

Water-Level Elevations and Temperatures

Water-level recorders

7. The water-level measurements in the study area were recorded using Microtide (solid state measurement) water-level recorders similar to the one shown in Figure 2. The Microtide water-level recorders contain a strain-gage-type pressure transducer housed in a subsurface case which records the absolute pressure of the column of water above the case. The pressure transducer

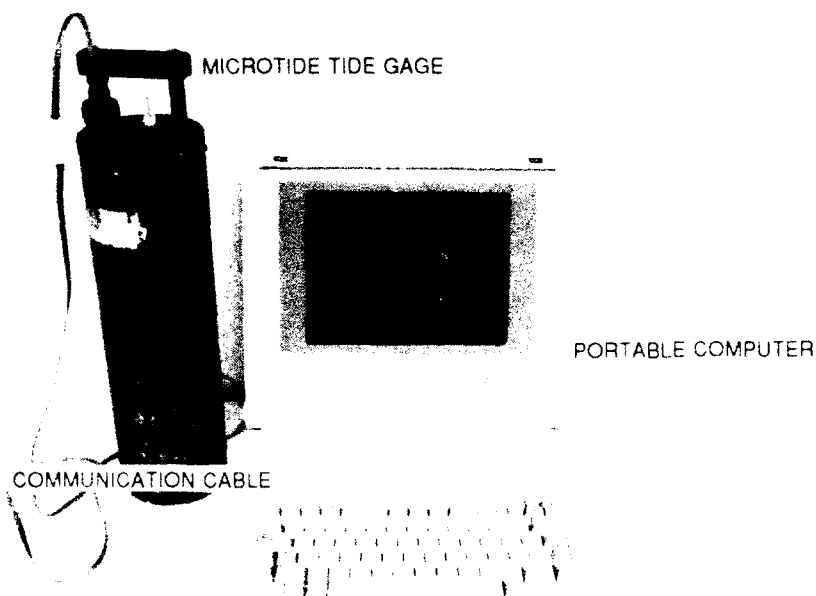


Figure 2. Microtide water-level recorder

is not vented to the atmosphere; therefore, an extra unit is required to be strategically positioned in the study area to record atmospheric pressure changes. The water column pressure is measured for the desired sample interval, and an average value is computed and stored on the internal RAM data logger. The stated accuracy is ± 0.1 percent of full scale (25 psia). The sampling time interval can be set from 1 min to 24 hr. A 10-min sampling interval was chosen for this study.

Water temperature sensors

8. The Microtide water-level recorder also measures temperature by means of a YSI thermilinear thermistor built into the recorder. The thermistor has a range of -5°C to $+45^{\circ}\text{C}$, with a stated accuracy of $\pm 0.1^{\circ}\text{C}$. The data from each recorder are stored on an accessible RAM located in the waterproof subsurface unit which also contains the d-c power supply.

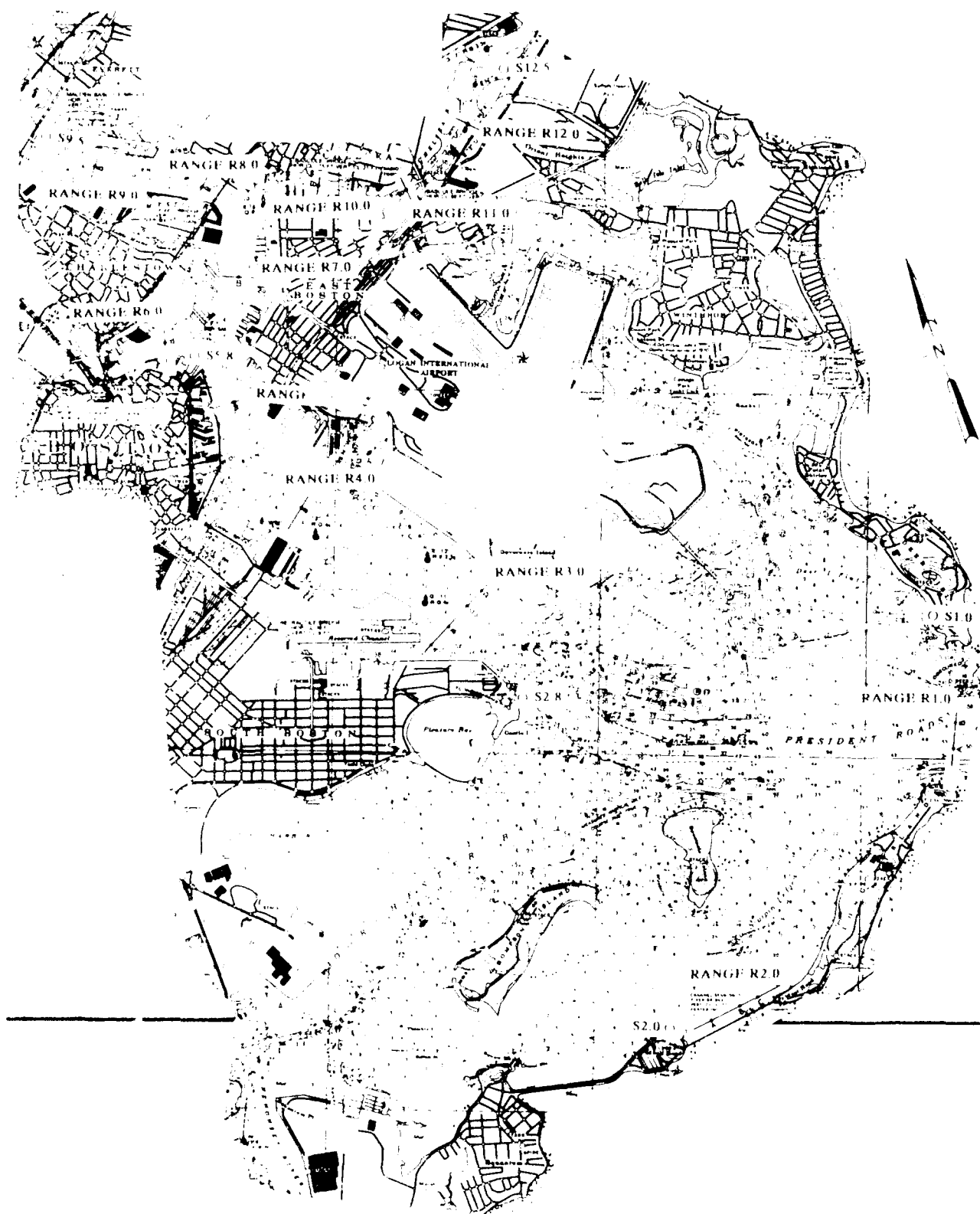
Measurement locations

9. Six water-level recorders were deployed throughout the study area as shown in Figure 3. Their locations are identified as S1.0, S2.0, S2.8, S5.8, S9.5, and S12.5. The locations were chosen for the strategic placement in Boston Harbor proper, the President Roads area, the Mystic River, and the Chelsea River, and the availability of a mounting structure. The locations adequately covered the total study area to provide information on phasing and amplitude of the peak tides during the data collection period.

Current Speed and Direction

Equipment setup

10. Six boats were equipped to deploy survey instruments over-the-side using the portable equipment setup shown in Figure 4. Collapsible aluminum frames were used to support the equipment, and winches (with 1/8-in. wire rope) were used to raise and lower the velocity and direction equipment. An indicator on the winch displayed the depth of the instruments below the water surface. A Gurley Model 665 vertical-axis cup-type impeller velocity meter with direct velocity read-out capabilities was used to measure the current speeds. These meters have a threshold speed of less than 0.2 fps and an accuracy of ± 0.1 fps for velocities less than 1 fps. Current directions were monitored with a magnetic directional indicator mounted above the velocity meter on a solid suspension bar. This entire assembly was connected to a



Boston Inner Harbor Nautical Chart No. 13272,
published by National Ocean Service 1981, US
Department of Commerce.

Figure 3 Instrument and data collection ranges location map



Figure 4. Field deployment of velocity measuring equipment

streamlined lead weight that held the sensors in a vertical position and oriented them into the direction of the flow. The signal cables from each instrument were raised and lowered with the equipment and were connected to the display units located on the deck of the boat. A more detailed display of the system is shown in Figure 5.

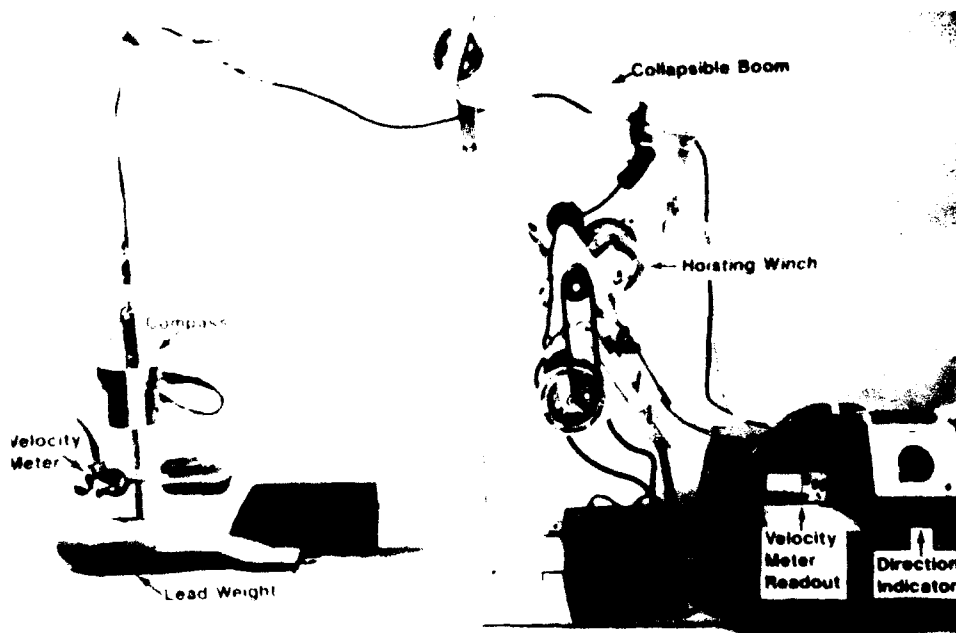


Figure 5. Components of the field instrument assembly

Measurement locations

11. For the 14-hr data collection period in the Boston Harbor study area, twelve ranges were selected to yield the information most applicable to the purpose. The general locations of these ranges are shown in Figure 3. Range R1.0, located in the President Roads area near Deer Island Entrance Light, had two stations equally spaced across the channel, Stations R1.0A and R1.0B, respectively. Range R2.0, located at the Long Island Bridge, had three stations equally spaced across the range, Stations R2.0A, R2.0B, and R2.0C. Range R3.0, located near the south-southwest end of Logan International Airport, had four stations, R3.0A, R3.0B, R3.0C, and R3.0D. Stations R3.0B and R3.0C were located at each edge of the channel. Range R4.0 was located immediately below the mouth of the Fort Point Channel. A centerline station only was used at this range, Station R4.0B. Range R5.0 was located approximately 0.2 mile south of the Boston Coast Guard Base. Range R6.0 was located in the entrance to the Constitution Marina. Range R7.0 was located approximately 0.1 mile south of the Little Mystic Channel. Range R8.0 was located in the Mystic River approximately 0.1 mile northwest of the Mystic River-Tobin Memorial Bridge. Range R9.0 was also located in the Mystic River approximately 0.3 mile east of the Malden-Bascule Bridge. Range R10.0 was located in the Chelsea River approximately 0.2 mile east of the Bascule Bridge near the confluence of the Mystic and Chelsea Rivers. Range R11.0 was located near the second Bascule Bridge on the Chelsea River. Range R12.0 was also in the Chelsea River approximately 0.5 mile northeast of the second Bascule Bridge. Ranges R4.0-R12.0 each had only one station located at the channel centerline.

Procedures

12. Prior to the beginning of the survey, the boats assigned to each range deployed anchors and mooring lines at each of the stations. The mooring lines were attached to large inflated buoys for retrieving the lines during each sampling period. The boat moved into position at each of the buoys and used the anchored line to hold a steady position in the current. The boat propellers were not turning while the data were being collected. At each station, current speed and direction were measured at five depths: near-bottom, three-quarter depth, middepth, one-quarter depth, and near-surface for each hour of the survey period. The near-bottom measurements were made at a distance of 2.0 ft from the actual bottom. The three-quarter, middepth, and one-quarter measurements were obtained at the actual fractional depth

measurement. The near-surface measurements were obtained at a distance of 3.0 ft below the water surface.

Conditions

13. The 14-hr intensive data collection period encompassed an entire tide cycle during a spring tide range. The maximum tidal range measured during the survey was 13.3 ft. Mostly clear skies existed at the time of the survey, and wind conditions ranged from a light wind of 4 to 5 mph to a stiff northeast wind of 12 mph.

Post-Survey Procedures

14. On 7 November 1990, following the intensive data collection survey, the water-level recorders were serviced to retrieve the collected data. Then the data were transferred to computer diskettes using an RS232 communication cable and a portable computer. Physical measurements from the water surface to established reference points for determination of depth of submergence of the sensor were made for verification of sensor readings prior to the removal of each sensor.

PART III: DATA PRESENTATION

Water-Level Elevation Data

15. The tidal variations of the water-level elevation data observed during the intensive survey are listed in Tables 1-5. Plots of the water-level data for periods of 24 hr prior to, during, and following the survey period dates are shown in Plates 1-5. All the water-level recorders, with the exception of S1.0, functioned properly during the period immediately prior to and following the survey. Instrument locations S1.0 and S2.0 each had two water-level recorders installed for backup purposes in the event one of the instruments failed to record the data. An unusual situation occurred at location S1.0 where both of the recorders failed to record any data. Just prior to installation, the gages had been prepared to set the start time of the data recording and to verify that the sensor was operating properly. At location S2.0 both instruments worked properly. At all other locations only a single water-level recorder was deployed.

16. The data from S2.0 were used as reference data for comparison with the data from the other stations in order to estimate tidal phase and range differences between the lower portion of Boston Harbor and the upper boundaries of the study area. This comparison illustrated that tide ranges observed were essentially equal with the maximum tidal range observed at S2.0 and S9.5 of 13.2 ft on 5 November 1990. The comparison also demonstrated the tide phase difference was 0.17 hr between S2.0, S9.5, and S12.5 occurring on 5 November 1990 at the time of high water. During the ebb phase period, the time lag between the low water reading at the gage at S9.5 (at 1850 EST) and the gage at S2.0 (1840 EST) was also 0.17 hr.

Over-the-Side Current Speed and Direction Data

17. Tables 6-23 are time series listings of the over-the-side current speed data obtained at the twelve ranges as described in paragraph 11. Plates 7-23 are plots of the velocity data for each range for the cycle of the tide (ebb and flood) during the survey period. The maximum velocity observed at the lower range, at Station R1.0A, in the channel was 4.0 fps at the surface during the flood cycle. The maximum velocity observed in the Mystic

River channel at Station R8.0B was 1.4 fps at the one-quarter depth during the ebb cycle. The maximum velocity in the channel of the Chelsea River at Station R12.0B was 1.4 fps at the surface during the ebb cycle.

18. The freshwater inflow from the rivers local to this area did not contribute significantly to the flow in the channel as is indicated by the generally low velocity readings obtained at Ranges R8.0 to R12.0. As a result, there were no large variations, other than tidal, in the magnitude and direction of the currents. No eddies and unusual flow circulation patterns created by change in the tidal periods were observed, other than those presented in the data. However, the changes within the system were not always detectable using hourly observation periods representative of this study.

PART IV: SUMMARY

19. The following observations were made of the data presented herein which were collected from the intensive survey and longer term sampling efforts within the Boston Harbor system from 2 to 7 November 1990:

- a. The tide ranges were virtually the same from the lower harbor water-level recorder, S2.0, to the upper Chelsea River water-level recorder, S12.0.
- b. The time lag between the peak water levels of the lower bay and upper river was approximately 0.17 hr.
- c. The maximum velocities observed during the survey occurred at the strength of flood of the tidal cycle. The maximum recorded velocity was 4.0 fps at Station R1.0A.

Table 1
Water-Level Elevation, Station S2.0
4-7 November 1990

Julian Date	Time		Water-Level Elevation,* ft
	hr	days	
308	07:30	0.3125	-1.8
308	07:40	0.3194	-1.3
308	07:50	0.3264	-0.9
308	08:00	0.3333	-0.4
308	08:10	0.3403	0.1
308	08:20	0.3472	0.6
308	08:30	0.3542	1.1
308	08:40	0.3611	1.6
308	08:50	0.3681	2.0
308	09:00	0.3750	2.5
308	09:10	0.3819	3.0
308	09:20	0.3889	3.5
308	09:30	0.3958	4.0
308	09:40	0.4028	4.4
308	09:50	0.4097	4.8
308	10:00	0.4167	5.2
308	10:10	0.4236	5.6
308	10:20	0.4306	5.9
308	10:30	0.4375	6.1
308	10:40	0.4444	6.3
308	10:50	0.4514	6.5
308	11:00	0.4583	6.6
308	11:10	0.4653	6.7
308	11:20	0.4722	6.7
308	11:30	0.4792	6.7
308	11:40	0.4861	6.6
308	11:50	0.4931	6.5
308	12:00	0.5000	6.4
308	12:10	0.5069	6.2
308	12:20	0.5139	6.0
308	12:30	0.5208	5.7
308	12:40	0.5278	5.4
308	12:50	0.5347	5.1
308	13:00	0.5417	4.7
308	13:10	0.5486	4.3
308	13:20	0.5556	3.9
308	13:30	0.5625	3.5
308	13:40	0.5694	3.1
308	13:50	0.5764	2.6
308	14:00	0.5833	2.1
308	14:10	0.5903	1.6
308	14:20	0.5972	1.1
308	14:30	0.6042	0.6

(Continued)

* Mean water-level elevation used as datum.

Table 1. (Continued)

Julian Date	Time		Water-Level Elevation, ft
	hr	days	
308	14:40	0.6111	0.2
308	14:50	0.6181	-0.3
308	15:00	0.6250	-0.8
308	15:10	0.6319	-1.4
308	15:20	0.6389	-1.9
308	15:30	0.6458	-2.5
308	15:40	0.6528	-3.0
308	15:50	0.6597	-3.5
308	16:00	0.6667	-4.0
308	16:10	0.6736	-4.5
308	16:20	0.6806	-4.9
308	16:30	0.6875	-5.4
308	16:40	0.6944	-5.8
308	16:50	0.7014	-6.2
308	17:00	0.7083	-6.5
308	17:10	0.7153	-6.8
308	17:20	0.7222	-7.0
308	17:30	0.7292	-7.2
308	17:40	0.7361	-7.3
308	17:50	0.7431	-7.3
308	18:00	0.7500	-7.3
308	18:10	0.7569	-7.3
308	18:20	0.7639	-7.2
308	18:30	0.7708	-7.1
308	18:40	0.7778	-6.9
308	18:50	0.7847	-6.7
308	19:00	0.7917	-6.4
308	19:10	0.7986	-6.0
308	19:20	0.8056	-5.6
308	19:30	0.8125	-5.3
308	19:40	0.8194	-4.9
308	19:50	0.8264	-4.5
308	20:00	0.8333	-4.1
308	20:10	0.8403	-3.7
308	20:20	0.8472	-3.3
308	20:30	0.8542	-2.9
308	20:40	0.8611	-2.5
308	20:50	0.8681	-2.0
308	21:00	0.8750	-1.5
308	21:10	0.8819	-1.0
308	21:20	0.8889	-0.5
308	21:30	0.8958	-0.0
308	21:40	0.9028	0.5
308	21:50	0.9097	1.0
308	22:00	0.9167	1.4
308	22:10	0.9236	1.9
308	22:20	0.9306	2.3
308	22:30	0.9375	2.8

(Continued)

Table 1. (Continued)

Julian Date	Time		Water-Level Elevation, ft
	hr	days	
308	22:40	0.9444	3.2
308	22:50	0.9514	3.5
308	23:00	0.9583	3.8
308	23:10	0.9653	4.0
308	23:20	0.9722	4.3
308	23:30	0.9792	4.4
308	23:40	0.9861	4.6
308	23:50	0.9931	4.7
309	00:00	1.0000	4.7
309	00:10	1.0069	4.8
309	00:20	1.0139	4.8
309	00:30	1.0208	4.7
309	00:40	1.0278	4.6
309	00:50	1.0347	4.5
309	01:00	1.0417	4.3
309	01:10	1.0486	4.1
309	01:20	1.0556	3.8
309	01:30	1.0625	3.6
309	01:40	1.0694	3.3
309	01:50	1.0764	3.0
309	02:00	1.0833	2.6
309	02:10	1.0903	2.3
309	02:20	1.0972	1.9
309	02:30	1.1042	1.5
309	02:40	1.1111	1.2
309	02:50	1.1181	0.8
309	03:00	1.1250	0.4
309	03:10	1.1319	-0.1
309	03:20	1.1389	-0.5
309	03:30	1.1458	-1.0
309	03:40	1.1528	-1.5
309	03:50	1.1597	-1.9
309	04:00	1.1667	-2.4
309	04:10	1.1736	-2.9
309	04:20	1.1806	-3.3
309	04:30	1.1875	-3.7
309	04:40	1.1944	-4.1
309	04:50	1.2014	-4.4
309	05:00	1.2083	-4.7
309	05:10	1.2153	-5.1
309	05:20	1.2222	-5.4
309	05:30	1.2292	-5.6
309	05:40	1.2361	-5.9
309	05:50	1.2431	-6.0
309	06:00	1.2500	-6.1
309	06:10	1.2569	-6.1
309	06:20	1.2639	-6.1
309	06:30	1.2708	-6.0

(Continued)

Table 1. (Continued)

Julian Date	Time		Water-Level Elevation, ft
	hr	days	
309	06:40	1.2778	-5.7
309	06:50	1.2847	-5.5
309	07:00	1.2917	-5.2
309	07:10	1.2986	-4.8
309	07:20	1.3056	-4.4
309	07:30	1.3125	-4.1
309	07:40	1.3194	-3.7
309	07:50	1.3264	-3.3
309	08:00	1.3333	-2.9
309	08:10	1.3403	-2.6
309	08:20	1.3472	-2.1
309	08:30	1.3542	-1.7
309	08:40	1.3611	-1.3
309	08:50	1.3681	-0.8
309	09:00	1.3750	-0.3
309	09:10	1.3819	0.2
309	09:20	1.3889	0.8
309	09:30	1.3958	1.2
309	09:40	1.4028	1.7
309	09:50	1.4097	2.1
309	10:00	1.4167	2.6
309	10:10	1.4236	3.1
309	10:20	1.4306	3.6
309	10:30	1.4375	4.1
309	10:40	1.4444	4.5
309	10:50	1.4514	5.0
309	11:00	1.4583	5.3
309	11:10	1.4653	5.7
309	11:20	1.4722	5.9
309	11:30	1.4792	6.2
309	11:40	1.4861	6.4
309	11:50	1.4931	6.5
309	12:00	1.5000	6.6
309	12:10	1.5069	6.7
309	12:20	1.5139	6.8
309	12:30	1.5208	6.7
309	12:40	1.5278	6.6
309	12:50	1.5347	6.5
309	13:00	1.5417	6.3
309	13:10	1.5486	6.2
309	13:20	1.5556	5.9
309	13:30	1.5625	5.7
309	13:40	1.5694	5.5
309	13:50	1.5764	5.1
309	14:00	1.5833	4.9
309	14:10	1.5903	4.5
309	14:20	1.5972	4.2
309	14:30	1.6042	3.8

(Continued)

Table 1. (Continued)

Julian Date	Time		Water-Level Elevation, ft
	hr	days	
309	14:40	1.6111	3.3
309	14:50	1.6181	2.8
309	15:00	1.6250	2.3
309	15:10	1.6319	1.8
309	15:20	1.6389	1.3
309	15:30	1.6458	0.8
309	15:40	1.6528	0.3
309	15:50	1.6597	-0.2
309	16:00	1.6667	-0.7
309	16:10	1.6736	-1.2
309	16:20	1.6806	-1.6
309	16:30	1.6875	-2.1
309	16:40	1.6944	-2.6
309	16:50	1.7014	-3.1
309	17:00	1.7083	-3.5
309	17:10	1.7153	-4.0
309	17:20	1.7222	-4.4
309	17:30	1.7292	-4.9
309	17:40	1.7361	-5.2
309	17:50	1.7431	-5.5
309	18:00	1.7500	-5.8
309	18:10	1.7569	-6.1
309	18:20	1.7639	-6.2
309	18:30	1.7708	-6.4
309	18:40	1.7778	-6.4
309	18:50	1.7847	-6.4
309	19:00	1.7917	-6.4
309	19:10	1.7986	-6.3
309	19:20	1.8056	-6.1
309	19:30	1.8125	-6.0
309	19:40	1.8194	-5.8
309	19:50	1.8264	-5.5
309	20:00	1.8333	-5.2
309	20:10	1.8403	-4.9
309	20:20	1.8472	-4.6
309	20:30	1.8542	-4.3
309	20:40	1.8611	-3.9
309	20:50	1.8681	-3.6
309	21:00	1.8750	-3.2
309	21:10	1.8819	-2.8
309	21:20	1.8889	-2.5
309	21:30	1.8958	-2.0
309	21:40	1.9028	-1.6
309	21:50	1.9097	-1.1
309	22:00	1.9167	-0.6
309	22:10	1.9236	-0.2
309	22:20	1.9306	0.3
309	22:30	1.9375	0.8

(Continued)

(Sheet 5 of 10)

Table 1. (Continued)

Julian Date	Time		Water-Level Elevation, ft
	hr	days	
309	22:40	1.9444	1.3
309	22:50	1.9514	1.7
309	23:00	1.9583	2.2
309	23:10	1.9653	2.6
309	23:20	1.9722	3.0
309	23:30	1.9792	3.5
309	23:40	1.9861	3.8
309	23:50	1.9931	4.2
310	00:00	2.0000	4.4
310	00:10	2.0069	4.7
310	00:20	2.0139	4.8
310	00:30	2.0208	5.1
310	00:40	2.0278	5.1
310	00:50	2.0347	5.3
310	01:00	2.0417	5.3
310	01:10	2.0486	5.3
310	01:20	2.0556	5.2
310	01:30	2.0625	5.1
310	01:40	2.0694	4.9
310	01:50	2.0764	4.8
310	02:00	2.0833	4.5
310	02:10	2.0903	4.4
310	02:20	2.0972	4.1
310	02:30	2.1042	3.9
310	02:40	2.1111	3.5
310	02:50	2.1181	3.2
310	03:00	2.1250	2.8
310	03:10	2.1319	2.6
310	03:20	2.1389	2.1
310	03:30	2.1458	1.8
310	03:40	2.1528	1.4
310	03:50	2.1597	1.0
310	04:00	2.1667	0.7
310	04:10	2.1736	0.3
310	04:20	2.1806	-0.1
310	04:30	2.1875	-0.6
310	04:40	2.1944	-1.0
310	04:50	2.2014	-1.4
310	05:00	2.2083	-1.8
310	05:10	2.2153	-2.2
310	05:20	2.2222	-2.6
310	05:30	2.2292	-2.9
310	05:40	2.2361	-3.3
310	05:50	2.2431	-3.6
310	06:00	2.2500	-3.8
310	06:10	2.2569	-4.0
310	06:20	2.2639	-4.3
310	06:30	2.2708	-4.5

(Continued)

Table 1. (Continued)

Julian Date	Time		Water-Level Elevation, ft.
	hr	days	
310	06:40	2 2778	-4.6
310	06:50	2.2847	-4.8
310	07:00	2.2917	-4.9
310	07:10	2.2986	-4.9
310	07:20	2.3056	-4.7
310	07:30	2.3125	-4.6
310	07:40	2.3194	-4.6
310	07:50	2.3264	-4.3
310	08:00	2.3333	-3.9
310	08:10	2.3403	-3.6
310	08:20	2.3472	-3.4
310	08:30	2.3542	-3.0
310	08:40	2.3611	-2.6
310	08:50	2.3681	-2.3
310	09:00	2 3750	-1.9
310	09:10	2.3819	-1.5
310	09:20	2.3889	-1.0
310	09:30	2.3958	-0.6
310	09:40	2.4028	-0.2
310	09:50	2.4097	0.0
310	10:00	2.4167	0.3
310	10:10	2.4236	0.8
310	10:20	2.4306	1.1
310	10:30	2.4375	1.4
310	10:40	2.4444	1.7
310	10:50	2.4514	2.0
310	11:00	2.4583	2.3
310	11:10	2.4653	2.6
310	11:20	2.4722	2.9
310	11:30	2.4792	3.2
310	11:40	2.4861	3.5
310	11:50	2.4931	3.8
310	12:00	2.5000	4.1
310	12:10	2.5069	4.4
310	12:20	2.5139	4.6
310	12:30	2.5208	4.9
310	12:40	2.5278	5.1
310	12:50	2.5347	5.3
310	13:00	2.5417	5.5
310	13:10	2.5486	5.7
310	13:20	2.5556	5.9
310	13:30	2.5625	6.1
310	13:40	2.5694	6.3
310	13:50	2.5764	6.5
310	14:00	2.5833	6.7
310	14:10	2.5903	6.9
310	14:20	2.5972	7.1
310	14:30	2.6042	7.3

(Continued)

Table 1. (Continued)

Julian Date	Time		Water Level Elevation, ft
	hr	days	
310	14:40	2.6111	4.7
310	14:50	2.6181	4.3
310	15:00	2.6250	3.9
310	15:10	2.6319	3.5
310	15:20	2.6389	3.1
310	15:30	2.6458	2.6
310	15:40	2.6528	2.3
310	15:50	2.6597	1.8
310	16:00	2.6667	1.4
310	16:10	2.6736	0.9
310	16:20	2.6806	0.4
310	16:30	2.6875	-0.0
310	16:40	2.6944	-0.5
310	16:50	2.7014	-1.0
310	17:00	2.7083	-1.4
310	17:10	2.7153	-2.0
310	17:20	2.7222	-2.5
310	17:30	2.7292	-2.9
310	17:40	2.7361	-3.4
310	17:50	2.7431	-3.9
310	18:00	2.7500	-4.3
310	18:10	2.7569	-4.8
310	18:20	2.7639	-5.2
310	18:30	2.7708	-5.5
310	18:40	2.7778	-5.9
310	18:50	2.7847	-6.2
310	19:00	2.7917	-6.5
310	19:10	2.7986	-6.7
310	19:20	2.8056	-6.9
310	19:30	2.8125	-6.9
310	19:40	2.8194	-7.0
310	19:50	2.8264	-7.0
310	20:00	2.8333	-7.0
310	20:10	2.8403	-6.9
310	20:20	2.8472	-6.8
310	20:30	2.8542	-6.7
310	20:40	2.8611	-6.4
310	20:50	2.8681	-6.1
310	21:00	2.8750	-5.8
310	21:10	2.8819	-5.5
310	21:20	2.8889	-5.2
310	21:30	2.8958	-4.8
310	21:40	2.9028	-4.3
310	21:50	2.9097	-4.0
310	22:00	2.9167	-3.6
310	22:10	2.9236	-3.2
310	22:20	2.9306	-2.9
310	22:30	2.9375	-2.5

(Continued)

Table 1. (Continued)

Julian Date	Time		Water-Level Elevation, ft
	hr	days	
310	22:40	2.9444	-2.2
310	22:50	2.9514	-1.8
310	23:00	2.9583	-1.4
310	23:10	2.9653	-0.9
310	23:20	2.9722	-0.5
310	23:30	2.9792	-0.0
310	23:40	2.9861	0.4
310	23:50	2.9931	0.9
311	00:00	3.0000	1.3
311	00:10	3.0069	1.7
311	00:20	3.0139	2.1
311	00:30	3.0208	2.4
311	00:40	3.0278	2.7
311	00:50	3.0347	3.0
311	01:00	3.0417	3.2
311	01:10	3.0486	3.5
311	01:20	3.0556	3.7
311	01:30	3.0625	3.8
311	01:40	3.0694	4.0
311	01:50	3.0764	4.0
311	02:00	3.0833	4.1
311	02:10	3.0903	4.1
311	02:20	3.0972	4.1
311	02:30	3.1042	4.1
311	02:40	3.1111	4.0
311	02:50	3.1181	3.9
311	03:00	3.1250	3.7
311	03:10	3.1319	3.6
311	03:20	3.1389	3.3
311	03:30	3.1458	3.0
311	03:40	3.1528	2.7
311	03:50	3.1597	2.4
311	04:00	3.1667	2.0
311	04:10	3.1736	1.7
311	04:20	3.1806	1.4
311	04:30	3.1875	1.1
311	04:40	3.1944	0.6
311	04:50	3.2014	0.3
311	05:00	3.2083	-0.1
311	05:10	3.2153	-0.5
311	05:20	3.2222	-0.9
311	05:30	3.2292	-1.3
311	05:40	3.2361	-1.8
311	05:50	3.2431	-2.2
311	06:00	3.2500	-2.7
311	06:10	3.2569	-3.1
311	06:20	3.2639	-3.4
311	06:30	3.2708	-3.9

(Continued)

Table 1. (Concluded)

Julian Date	Time		Water-Level Elevation, ft
	hr	days	
311	06:40	3.2778	-4.2
311	06:50	3.2847	-4.5
311	07:00	3.2917	-4.8
311	07:10	3.2986	-5.0
311	07:20	3.3056	-5.2
311	07:30	3.3125	-5.3
311	07:40	3.3194	-5.5

Table 2
Water-Level Elevation, Station S2.8
2-7 November 1990

Julian Date	Time		Water-Level Elevation,* ft
	hr	days	
306	14:30	0.6042	-1.3
306	14:40	0.6111	-1.7
306	14:50	0.6181	-2.0
306	15:00	0.6250	-2.4
306	15:10	0.6319	-2.6
306	15:20	0.6389	-2.9
306	15:30	0.6458	-3.1
306	15:40	0.6528	-3.3
306	15:50	0.6597	-3.4
306	16:00	0.6667	-3.5
306	16:10	0.6736	-3.6
306	16:20	0.6806	-3.5
306	16:30	0.6875	-3.4
306	16:40	0.6944	-3.3
306	16:50	0.7014	-3.1
306	17:00	0.7083	-2.8
306	17:10	0.7153	-2.5
306	17:20	0.7222	-2.2
306	17:30	0.7292	-1.9
306	17:40	0.7361	-1.6
306	17:50	0.7431	-1.3
306	18:00	0.7500	-0.9
306	18:10	0.7569	-0.6
306	18:20	0.7639	-0.2
306	18:30	0.7708	0.2
306	18:40	0.7778	0.6
306	18:50	0.7847	1.0
306	19:00	0.7917	1.5
306	19:10	0.7986	1.9
306	19:20	0.8056	2.4
306	19:30	0.8125	2.8
306	19:40	0.8194	3.3
306	19:50	0.8264	3.7
306	20:00	0.8333	4.2
306	20:10	0.8403	4.7
306	20:20	0.8472	5.1
306	20:30	0.8542	5.6
306	20:40	0.8611	6.0
306	20:50	0.8681	6.4
306	21:00	0.8750	6.6
306	21:10	0.8819	6.8
306	21:20	0.8889	6.9
306	21:30	0.8958	7.1

(Continued)

* Mean water-level elevation used as datum.

Table 2. (Continued)

Julian Date	Time		Water-Level Elevation, ft
	hr	days	
306	21:40	0.9028	7.4
306	21:50	0.9097	7.6
306	22:00	0.9167	7.8
306	22:10	0.9236	7.9
306	22:20	0.9306	8.1
306	22:30	0.9375	8.1
306	22:40	0.9444	8.1
306	22:50	0.9514	8.1
306	23:00	0.9583	8.0
306	23:10	0.9653	7.9
306	23:20	0.9722	7.8
306	23:30	0.9792	7.6
306	23:40	0.9861	7.4
306	23:50	0.9931	7.2
307	00:00	1.0000	6.9
307	00:10	1.0069	6.6
307	00:20	1.0139	6.3
307	00:30	1.0208	6.0
307	00:40	1.0278	5.6
307	00:50	1.0347	5.3
307	01:00	1.0417	4.9
307	01:10	1.0486	4.5
307	01:20	1.0556	4.1
307	01:30	1.0625	3.7
307	01:40	1.0694	3.3
307	01:50	1.0764	2.9
307	02:00	1.0833	2.4
307	02:10	1.0903	2.0
307	02:20	1.0972	1.5
307	02:30	1.1042	1.0
307	02:40	1.1111	0.5
307	02:50	1.1181	0.1
307	03:00	1.1250	-0.3
307	03:10	1.1319	-0.7
307	03:20	1.1389	-1.1
307	03:30	1.1458	-1.5
307	03:40	1.1528	-1.8
307	03:50	1.1597	-2.1
307	04:00	1.1667	-2.4
307	04:10	1.1736	-2.6
307	04:20	1.1806	-2.8
307	04:30	1.1875	-2.9
307	04:40	1.1944	-3.0
307	04:50	1.2014	-3.0
307	05:00	1.2083	-2.9
307	05:10	1.2153	-2.8
307	05:20	1.2222	-2.6
307	05:30	1.2292	-2.3

(Continued)

Table 2. (Continued)

Julian Date	Time		Water-Level Elevation, ft
	hr	days	
307	05:40	1.2361	-2.0
307	05:50	1.2431	-1.7
307	06:00	1.2500	-1.4
307	06:10	1.2569	-1.0
307	06:20	1.2639	-0.9
307	06:30	1.2708	-0.7
307	06:40	1.2778	-0.5
307	06:50	1.2847	-0.3
307	07:00	1.2917	0.1
307	07:10	1.2986	0.5
307	07:20	1.3056	0.9
307	07:30	1.3125	1.4
307	07:40	1.3194	1.9
307	07:50	1.3264	2.4
307	08:00	1.3333	2.9
307	08:10	1.3403	3.4
307	08:20	1.3472	3.9
307	08:30	1.3542	4.4
307	08:40	1.3611	4.9
307	08:50	1.3681	5.3
307	09:00	1.3750	5.8
307	09:10	1.3819	6.3
307	09:20	1.3889	6.8
307	09:30	1.3958	7.3
307	09:40	1.4028	7.7
307	09:50	1.4097	8.1
307	10:00	1.4167	8.5
307	10:10	1.4236	8.8
307	10:20	1.4306	9.1
307	10:30	1.4375	9.3
307	10:40	1.4444	9.5
307	10:50	1.4514	9.6
307	11:00	1.4583	9.7
307	11:10	1.4653	9.7
307	11:20	1.4722	9.7
307	11:30	1.4792	9.6
307	11:40	1.4861	9.5
307	11:50	1.4931	9.4
307	12:00	1.5000	9.2
307	12:10	1.5069	9.0
307	12:20	1.5139	8.8
307	12:30	1.5208	8.5
307	12:40	1.5278	8.2
307	12:50	1.5347	8.0
307	13:00	1.5417	7.6
307	13:10	1.5486	7.3
307	13:20	1.5556	6.9
307	13:30	1.5625	6.4

(Continued)

Table 2. (Continued)

Julian Date	Time		Water-Level Elevation, ft
	hr	days	
307	13:40	1.5694	5.9
307	13:50	1.5764	5.5
307	14:00	1.5833	5.0
307	14:10	1.5903	4.5
307	14:20	1.5972	4.0
307	14:30	1.6042	3.5
307	14:40	1.6111	3.0
307	14:50	1.6181	2.5
307	15:00	1.6250	1.9
307	15:10	1.6319	1.4
307	15:20	1.6389	0.9
307	15:30	1.6458	0.4
307	15:40	1.6528	-0.1
307	15:50	1.6597	-0.3
307	16:00	1.6667	-0.5
307	16:10	1.6736	-0.8
307	16:20	1.6806	-1.2
307	16:30	1.6875	-1.4
307	16:40	1.6944	-1.9
307	16:50	1.7014	-2.3
307	17:00	1.7083	-2.7
307	17:10	1.7153	-3.0
307	17:20	1.7222	-3.3
307	17:30	1.7292	-3.5
307	17:40	1.7361	-3.7
307	17:50	1.7431	-3.7
307	18:00	1.7500	-3.8
307	18:10	1.7569	-3.7
307	18:20	1.7639	-3.6
307	18:30	1.7708	-3.8
307	18:40	1.7778	-3.3
307	18:50	1.7847	-3.1
307	19:00	1.7917	-2.8
307	19:10	1.7986	-2.5
307	19:20	1.8056	-2.2
307	19:30	1.8125	-1.9
307	19:40	1.8194	-1.6
307	19:50	1.8264	-1.2
307	20:00	1.8333	-0.8
307	20:10	1.8403	-0.4
307	20:20	1.8472	0.0
307	20:30	1.8542	0.5
307	20:40	1.8611	0.9
307	20:50	1.8681	1.3
307	21:00	1.8750	1.8
307	21:10	1.8819	2.3
307	21:20	1.8889	2.8
307	21:30	1.8958	3.3

(Continued)

Table 2. (Continued)

Julian Date	Time		Water-Level Elevation, ft
	hr	days	
307	21:40	1.9028	3.8
307	21:50	1.9097	4.3
307	22:00	1.9167	4.8
307	22:10	1.9236	5.3
307	22:20	1.9306	5.7
307	22:30	1.9375	6.2
307	22:40	1.9444	6.6
307	22:50	1.9514	7.0
307	23:00	1.9583	7.3
307	23:10	1.9653	7.6
307	23:20	1.9722	7.9
307	23:30	1.9792	8.1
307	23:40	1.9861	8.3
307	23:50	1.9931	8.4
308	00:00	2.0000	8.5
308	00:10	2.0069	8.6
308	00:20	2.0139	8.5
308	00:30	2.0208	8.4
308	00:40	2.0278	8.3
308	00:50	2.0347	8.2
308	01:00	2.0417	8.0
308	01:10	2.0486	7.9
308	01:20	2.0556	7.7
308	01:30	2.0625	7.5
308	01:40	2.0694	7.3
308	01:50	2.0764	7.3
308	02:00	2.0833	7.1
308	02:10	2.0903	6.8
308	02:20	2.0972	6.5
308	02:30	2.1042	6.2
308	02:40	2.1111	5.8
308	02:50	2.1181	5.4
308	03:00	2.1250	5.0
308	03:10	2.1319	4.6
308	03:20	2.1389	4.2
308	03:30	2.1458	3.8
308	03:40	2.1528	3.3
308	03:50	2.1597	2.9
308	04:00	2.1667	2.4
308	04:10	2.1736	1.9
308	04:20	2.1806	1.5
308	04:30	2.1875	1.0
308	04:40	2.1944	0.5
308	04:50	2.2014	0.2
308	05:00	2.2083	-0.3
308	05:10	2.2153	-0.7
308	05:20	2.2222	-1.0
308	05:30	2.2292	-1.4

(Continued)

Table 2. (Continued)

Julian Date	Time		Water-Level Elevation, ft
	hr	days	
308	05:40	2.2361	-1.7
308	05:50	2.2431	-2.0
308	06:00	2.2500	-2.2
308	06:10	2.2569	-2.3
308	06:20	2.2639	-2.4
308	06:30	2.2708	-2.4
308	06:40	2.2778	-2.4
308	06:50	2.2847	-2.3
308	07:00	2.2917	-2.2
308	07:10	2.2986	-2.0
308	07:20	2.3056	-1.8
308	07:30	2.3125	-1.5
308	07:40	2.3194	-1.2
308	07:50	2.3264	-0.8
308	08:00	2.3333	-0.5
308	08:10	2.3403	-0.1
308	08:20	2.3472	0.3
308	08:30	2.3542	0.7
308	08:40	2.3611	1.1
308	08:50	2.3681	1.5
308	09:00	2.3750	2.0
308	09:10	2.3819	2.4
308	09:20	2.3889	2.9
308	09:30	2.3958	3.4
308	09:40	2.4028	3.8
308	09:50	2.4097	4.3
308	10:00	2.4167	4.8
308	10:10	2.4236	5.3
308	10:20	2.4306	5.7
308	10:30	2.4375	6.2
308	10:40	2.4444	6.7
308	10:50	2.4514	6.9
308	11:00	2.4583	7.3
308	11:10	2.4653	7.7
308	11:20	2.4722	7.9
308	11:30	2.4792	8.1
308	11:40	2.4861	8.5
308	11:50	2.4931	8.8
308	12:00	2.5000	9.1
308	12:10	2.5069	9.3
308	12:20	2.5139	9.5
308	12:30	2.5208	9.7
308	12:40	2.5278	9.8
308	12:50	2.5347	9.9
308	13:00	2.5417	9.9
308	13:10	2.5486	9.9
308	13:20	2.5556	9.8
308	13:30	2.5625	9.7

(Continued)

Table 2. (Continued)

Julian Date	Time		Water-Level Elevation, ft
	hr	days	
308	13:40	2.5694	9.6
308	13:50	2.5764	9.4
308	14:00	2.5833	9.2
308	14:10	2.5903	9.0
308	14:20	2.5972	8.7
308	14:30	2.6042	8.3
308	14:40	2.6111	8.0
308	14:50	2.6181	7.6
308	15:00	2.6250	7.2
308	15:10	2.6319	6.8
308	15:20	2.6389	6.3
308	15:30	2.6458	5.9
308	15:40	2.6528	5.4
308	15:50	2.6597	4.9
308	16:00	2.6667	4.4
308	16:10	2.6736	4.0
308	16:20	2.6806	3.5
308	16:30	2.6875	2.9
308	16:40	2.6944	2.4
308	16:50	2.7014	1.9
308	17:00	2.7083	1.4
308	17:10	2.7153	0.8
308	17:20	2.7222	0.3
308	17:30	2.7292	-0.3
308	17:40	2.7361	-0.8
308	17:50	2.7431	-1.3
308	18:00	2.7500	-1.7
308	18:10	2.7569	-2.2
308	18:20	2.7639	-2.6
308	18:30	2.7708	-2.9
308	18:40	2.7778	-3.2
308	18:50	2.7847	-3.5
308	19:00	2.7917	-3.7
308	19:10	2.7986	-3.9
308	19:20	2.8056	-4.0
308	19:30	2.8125	-4.1
308	19:40	2.8194	-4.1
308	19:50	2.8264	-4.0
308	20:00	2.8333	-4.0
308	20:10	2.8403	-3.8
308	20:20	2.8472	-3.7
308	20:30	2.8542	-3.5
308	20:40	2.8611	-3.4
308	20:50	2.8681	-3.2
308	21:00	2.8750	-3.1
308	21:10	2.8819	-2.7
308	21:20	2.8889	-2.4
308	21:30	2.8958	-2.0

(Continued)

Table 2. (Continued)

Julian Date	Time		Water-Level Elevation, ft
	hr	days	
308	21:40	2.9028	-1.6
308	21:50	2.9097	-1.2
308	22:00	2.9167	-0.8
308	22:10	2.9236	-0.4
308	22:20	2.9306	-0.0
308	22:30	2.9375	0.4
308	22:40	2.9444	0.8
308	22:50	2.9514	1.3
308	23:00	2.9583	1.7
308	23:10	2.9653	2.3
308	23:20	2.9722	2.7
308	23:30	2.9792	3.2
308	23:40	2.9861	3.8
308	23:50	2.9931	4.3
309	00:00	3.0000	4.7
309	00:10	3.0069	5.2
309	00:20	3.0139	5.6
309	00:30	3.0208	6.0
309	00:40	3.0278	6.4
309	00:50	3.0347	6.8
309	01:00	3.0417	7.0
309	01:10	3.0486	7.3
309	01:20	3.0556	7.5
309	01:30	3.0625	7.7
309	01:40	3.0694	7.8
309	01:50	3.0764	8.0
309	02:00	3.0833	8.0
309	02:10	3.0903	8.0
309	02:20	3.0972	8.0
309	02:30	3.1042	8.0
309	02:40	3.1111	7.9
309	02:50	3.1181	7.8
309	03:00	3.1250	7.6
309	03:10	3.1319	7.4
309	03:20	3.1389	7.1
309	03:30	3.1458	6.8
309	03:40	3.1528	6.6
309	03:50	3.1597	6.2
309	04:00	3.1667	5.9
309	04:10	3.1736	5.5
309	04:20	3.1806	5.2
309	04:30	3.1875	4.9
309	04:40	3.1944	4.5
309	04:50	3.2014	4.1
309	05:00	3.2083	3.7
309	05:10	3.2153	3.2
309	05:20	3.2222	2.8
309	05:30	3.2292	2.3

(Continued)

Table 2. (Continued)

Julian Date	Time		Water-Level Elevation, ft
	hr	days	
309	05:40	3.2361	1.8
309	05:50	3.2431	1.6
309	06:00	3.2500	1.4
309	06:10	3.2569	1.0
309	06:20	3.2639	0.8
309	06:30	3.2708	0.4
309	06:40	3.2778	0.0
309	06:50	3.2847	-0.4
309	07:00	3.2917	-0.8
309	07:10	3.2986	-1.2
309	07:20	3.3056	-1.5
309	07:30	3.3125	-1.8
309	07:40	3.3194	-2.1
309	07:50	3.3264	-2.4
309	08:00	3.3333	-2.6
309	08:10	3.3403	-2.8
309	08:20	3.3472	-2.8
309	08:30	3.3542	-2.8
309	08:40	3.3611	-2.8
309	08:50	3.3681	-2.6
309	09:00	3.3750	-2.4
309	09:10	3.3819	-2.1
309	09:20	3.3889	-1.8
309	09:30	3.3958	-1.5
309	09:40	3.4028	-1.1
309	09:50	3.4097	-0.8
309	10:00	3.4167	-0.4
309	10:10	3.4236	-0.0
309	10:20	3.4306	0.3
309	10:30	3.4375	0.8
309	10:40	3.4444	1.1
309	10:50	3.4514	1.6
309	11:00	3.4583	2.1
309	11:10	3.4653	2.5
309	11:20	3.4722	3.0
309	11:30	3.4792	3.5
309	11:40	3.4861	4.1
309	11:50	3.4931	4.5
309	12:00	3.5000	5.0
309	12:10	3.5069	5.5
309	12:20	3.5139	5.9
309	12:30	3.5208	6.4
309	12:40	3.5278	6.9
309	12:50	3.5347	7.4
309	13:00	3.5417	7.8
309	13:10	3.5486	8.3
309	13:20	3.5556	8.6
309	13:30	3.5625	9.0

(Continued)

Table 2. (Continued)

Julian Date	Time		Water-Level Elevation, ft
	hr	days	
309	13:40	3.5694	9.3
309	13:50	3.5764	9.5
309	14:00	3.5833	9.7
309	14:10	3.5903	9.8
309	14:20	3.5972	10.0
309	14:30	3.6042	10.0
309	14:40	3.6111	10.1
309	14:50	3.6181	10.0
309	15:00	3.6250	10.0
309	15:10	3.6319	9.9
309	15:20	3.6389	9.7
309	15:30	3.6458	9.5
309	15:40	3.6528	9.4
309	15:50	3.6597	9.3
309	16:00	3.6667	9.3
309	16:10	3.6736	9.0
309	16:20	3.6806	8.8
309	16:30	3.6875	8.5
309	16:40	3.6944	8.2
309	16:50	3.7014	7.9
309	17:00	3.7083	7.5
309	17:10	3.7153	7.1
309	17:20	3.7222	6.7
309	17:30	3.7292	6.1
309	17:40	3.7361	5.6
309	17:50	3.7431	5.2
309	18:00	3.7500	4.6
309	18:10	3.7569	4.1
309	18:20	3.7639	3.7
309	18:30	3.7708	3.2
309	18:40	3.7778	2.7
309	18:50	3.7847	2.2
309	19:00	3.7917	1.7
309	19:10	3.7986	1.2
309	19:20	3.8056	0.7
309	19:30	3.8125	0.2
309	19:40	3.8194	-0.2
309	19:50	3.8264	-0.7
309	20:00	3.8333	-1.1
309	20:10	3.8403	-1.5
309	20:20	3.8472	-1.9
309	20:30	3.8542	-2.2
309	20:40	3.8611	-2.5
309	20:50	3.8681	-2.7
309	21:00	3.8750	-2.9
309	21:10	3.8819	-3.0
309	21:20	3.8889	-3.1
309	21:30	3.8958	-3.1

(Continued)

Table 2. (Continued)

Julian Date	Time		Water-Level Elevation, ft
	hr	days	
309	21:40	3.9028	-3.0
309	21:50	3.9097	-2.9
309	22:00	3.9167	-2.8
309	22:10	3.9236	-2.6
309	22:20	3.9306	-2.4
309	22:30	3.9375	-2.2
309	22:40	3.9444	-1.9
309	22:50	3.9514	-1.5
309	23:00	3.9583	-1.2
309	23:10	3.9653	-0.9
309	23:20	3.9722	-0.6
309	23:30	3.9792	-0.2
309	23:40	3.9861	0.1
309	23:50	3.9931	0.5
310	00:00	4.0000	0.9
310	00:10	4.0069	1.3
310	00:20	4.0139	1.7
310	00:30	4.0208	2.2
310	00:40	4.0278	2.7
310	00:50	4.0347	3.0
310	01:00	4.0417	3.4
310	01:10	4.0486	3.7
310	01:20	4.0556	3.9
310	01:30	4.0625	4.1
310	01:40	4.0694	4.6
310	01:50	4.0764	5.1
310	02:00	4.0833	5.5
310	02:10	4.0903	6.0
310	02:20	4.0972	6.4
310	02:30	4.1042	6.8
310	02:40	4.1111	7.2
310	02:50	4.1181	7.5
310	03:00	4.1250	7.8
310	03:10	4.1319	8.0
310	03:20	4.1389	8.2
310	03:30	4.1458	8.4
310	03:40	4.1528	8.5
310	03:50	4.1597	8.6
310	04:00	4.1667	8.6
310	04:10	4.1736	8.6
310	04:20	4.1806	8.5
310	04:30	4.1875	8.4
310	04:40	4.1944	8.2
310	04:50	4.2014	8.1
310	05:00	4.2083	7.9
310	05:10	4.2153	7.7
310	05:20	4.2222	7.5
310	05:30	4.2292	7.2

(Continued)

(Sheet 11 of 11)

Table 2. (Continued)

Julian Date	Time		Water-Level Elevation, ft
	hr	days	
310	05:40	4.2361	6.9
310	05:50	4.2431	6.6
310	06:00	4.2500	6.2
310	06:10	4.2569	5.9
310	06:20	4.2639	5.5
310	06:30	4.2708	5.2
310	06:40	4.2778	4.8
310	06:50	4.2847	4.4
310	07:00	4.2917	4.1
310	07:10	4.2986	3.7
310	07:20	4.3056	3.3
310	07:30	4.3125	2.9
310	07:40	4.3194	2.4
310	07:50	4.3264	2.0
310	08:00	4.3333	1.6
310	08:10	4.3403	1.2
310	08:20	4.3472	0.8
310	08:30	4.3542	0.5
310	08:40	4.3611	0.2
310	08:50	4.3681	-0.1
310	09:00	4.3750	-0.4
310	09:10	4.3819	-0.6
310	09:20	4.3889	-0.8
310	09:30	4.3958	-1.1
310	09:40	4.4028	-1.2
310	09:50	4.4097	-1.3
310	10:00	4.4167	-1.5
310	10:10	4.4236	-1.5
310	10:20	4.4306	-1.3
310	10:30	4.4375	-1.3
310	10:40	4.4444	-1.3
310	10:50	4.4514	-1.2
310	11:00	4.4583	-1.1
310	11:10	4.4653	-0.8
310	11:20	4.4722	-0.5
310	11:30	4.4792	-0.2
310	11:40	4.4861	0.1
310	11:50	4.4931	0.4
310	12:00	4.5000	0.8
310	12:10	4.5069	1.1
310	12:20	4.5139	1.5
310	12:30	4.5208	1.9
310	12:40	4.5278	2.4
310	12:50	4.5347	2.8
310	13:00	4.5417	3.1
310	13:10	4.5486	3.5
310	13:20	4.5556	3.9
310	13:30	4.5625	4.2

(Continued)

Table 2. (Continued)

Julian Date	Time		Water-Level Elevation, ft
	hr	days	
310	13:40	4.5694	4.6
310	13:50	4.5764	5.1
310	14:00	4.5833	5.6
310	14:10	4.5903	6.0
310	14:20	4.5972	6.4
310	14:30	4.6042	6.9
310	14:40	4.6111	7.3
310	14:50	4.6181	7.6
310	15:00	4.6250	8.0
310	15:10	4.6319	8.4
310	15:20	4.6389	8.7
310	15:30	4.6458	9.0
310	15:40	4.6528	9.2
310	15:50	4.6597	9.2
310	16:00	4.6667	9.4
310	16:10	4.6736	9.4
310	16:20	4.6806	9.5
310	16:30	4.6875	9.6
310	16:40	4.6944	9.6
310	16:50	4.7014	9.6
310	17:00	4.7083	9.5
310	17:10	4.7153	9.4
310	17:20	4.7222	9.2
310	17:30	4.7292	9.0
310	17:40	4.7361	8.8
310	17:50	4.7431	8.5
310	18:00	4.7500	8.2
310	18:10	4.7569	7.7
310	18:20	4.7639	7.3
310	18:30	4.7708	6.8
310	18:40	4.7778	6.4
310	18:50	4.7847	6.0
310	19:00	4.7917	5.6
310	19:10	4.7986	5.2
310	19:20	4.8056	4.8
310	19:30	4.8125	4.3
310	19:40	4.8194	3.9
310	19:50	4.8264	3.7
310	20:00	4.8333	3.5
310	20:10	4.8403	3.1
310	20:20	4.8472	2.7
310	20:30	4.8542	2.4
310	20:40	4.8611	2.0
310	20:50	4.8681	1.5
310	21:00	4.8750	1.0
310	21:10	4.8819	0.5
310	21:20	4.8889	0.0
310	21:30	4.8958	-0.4

(Continued)

Table 2. (Continued)

Julian Date	Time		Water-Level Elevation, ft
	hr	days	
310	21:40	4.9028	-0.9
310	21:50	4.9097	-1.4
310	22:00	4.9167	-1.8
310	22:10	4.9236	-2.2
310	22:20	4.9306	-2.5
310	22:30	4.9375	-2.8
310	22:40	4.9444	-3.1
310	22:50	4.9514	-3.3
310	23:00	4.9583	-3.5
310	23:10	4.9653	-3.6
310	23:20	4.9722	-3.6
310	23:30	4.9792	-3.6
310	23:40	4.9861	-3.6
310	23:50	4.9931	-3.6
311	00:00	5.0000	-3.4
311	00:10	5.0069	-3.3
311	00:20	5.0139	-3.1
311	00:30	5.0208	-2.8
311	00:40	5.0278	-2.4
311	00:50	5.0347	-2.1
311	01:00	5.0417	-1.7
311	01:10	5.0486	-1.4
311	01:20	5.0556	-1.0
311	01:30	5.0625	-0.6
311	01:40	5.0694	-0.2
311	01:50	5.0764	0.2
311	02:00	5.0833	0.5
311	02:10	5.0903	0.8
311	02:20	5.0972	1.2
311	02:30	5.1042	1.6
311	02:40	5.1111	2.0
311	02:50	5.1181	2.4
311	03:00	5.1250	2.9
311	03:10	5.1319	3.4
311	03:20	5.1389	3.9
311	03:30	5.1458	4.3
311	03:40	5.1528	4.7
311	03:50	5.1597	5.1
311	04:00	5.1667	5.5
311	04:10	5.1736	5.8
311	04:20	5.1806	6.1
311	04:30	5.1875	6.4
311	04:40	5.1944	6.7
311	04:50	5.2014	6.9
311	05:00	5.2083	7.1
311	05:10	5.2153	7.3
311	05:20	5.2222	7.3
311	05:30	5.2292	7.3

(Continued)

Table 2. (Concluded)

Julian Date	Time		Water-Level Elevation ft
	hr	days	
311	05:40	5.2361	7.4
311	05:50	5.2431	7.4
311	06:00	5.2500	7.5
311	06:10	5.2569	7.6
311	06:20	5.2639	7.5
311	06:30	5.2708	7.5
311	06:40	5.2778	7.5
311	06:50	5.2847	7.3

Table 3
Water-Level Elevation, Station S5.8
2-7 November 1990

Julian Date	Time		Water-Level Elevation,* ft
	hr	days	
306	13:30	0.5625	-1.1
306	13:40	0.5694	-1.5
306	13:50	0.5764	-1.9
306	14:00	0.5833	-2.4
306	14:10	0.5903	-2.8
306	14:20	0.5972	-3.3
306	14:30	0.6042	-3.7
306	14:40	0.6111	-4.2
306	14:50	0.6181	-4.6
306	15:00	0.6250	-5.0
306	15:10	0.6319	-5.3
306	15:20	0.6389	-5.6
306	15:30	0.6458	-5.9
306	15:40	0.6528	-6.1
306	15:50	0.6597	-6.3
306	16:00	0.6667	-6.4
306	16:10	0.6736	-6.5
306	16:20	0.6806	-6.5
306	16:30	0.6875	-6.4
306	16:40	0.6944	-6.3
306	16:50	0.7014	-6.1
306	17:00	0.7083	-5.9
306	17:10	0.7153	-5.6
306	17:20	0.7222	-5.3
306	17:30	0.7292	-4.9
306	17:40	0.7361	-4.6
306	17:50	0.7431	-4.2
306	18:00	0.7500	-3.9
306	18:10	0.7569	-3.6
306	18:20	0.7639	-3.2
306	18:30	0.7708	-2.9
306	18:40	0.7778	-2.5
306	18:50	0.7847	-2.0
306	19:00	0.7917	-1.6
306	19:10	0.7986	-1.1
306	19:20	0.8056	-0.7
306	19:30	0.8125	-0.2
306	19:40	0.8194	0.2
306	19:50	0.8264	0.7
306	20:00	0.8333	1.1
306	20:10	0.8403	1.6
306	20:20	0.8472	2.1
306	20:30	0.8542	2.6

(Continued)

* Mean water-level elevation used as datum.

Table 3. (Continued)

Julian Date	Time		Water-Level Elevation, ft
	hr	days	
306	20:40	0.8611	3.0
306	20:50	0.8681	3.4
306	21:00	0.8750	3.8
306	21:10	0.8819	4.1
306	21:20	0.8889	4.4
306	21:30	0.8958	4.7
306	21:40	0.9028	4.9
306	21:50	0.9097	5.0
306	22:00	0.9167	5.1
306	22:10	0.9236	5.2
306	22:20	0.9306	5.2
306	22:30	0.9375	5.2
306	22:40	0.9444	5.2
306	22:50	0.9514	5.1
306	23:00	0.9583	4.9
306	23:10	0.9653	4.8
306	23:20	0.9722	4.6
306	23:30	0.9792	4.4
306	23:40	0.9861	4.1
306	23:50	0.9931	3.8
307	00:00	1.0000	3.5
307	00:10	1.0069	3.2
307	00:20	1.0139	2.8
307	00:30	1.0208	2.5
307	00:40	1.0278	2.1
307	00:50	1.0347	1.7
307	01:00	1.0417	1.3
307	01:10	1.0486	0.9
307	01:20	1.0556	0.5
307	01:30	1.0625	0.1
307	01:40	1.0694	-0.4
307	01:50	1.0764	-0.8
307	02:00	1.0833	-1.3
307	02:10	1.0903	-1.7
307	02:20	1.0972	-2.3
307	02:30	1.1042	-2.7
307	02:40	1.1111	-3.2
307	02:50	1.1181	-3.6
307	03:00	1.1250	-4.0
307	03:10	1.1319	-4.4
307	03:20	1.1389	-4.7
307	03:30	1.1458	-5.0
307	03:40	1.1528	-5.3
307	03:50	1.1597	-5.5
307	04:00	1.1667	-5.7
307	04:10	1.1736	-5.9
307	04:20	1.1806	-6.0
307	04:30	1.1875	-6.0

(Continued)

(Sheet 2 of 10)

Table 3. (Continued)

Julian Date	Time		Water-Level Elevation, ft
	hr	days	
307	04:40	1.1944	-6.0
307	04:50	1.2014	-5.8
307	05:00	1.2083	-5.6
307	05:10	1.2153	-5.3
307	05:20	1.2222	-5.0
307	05:30	1.2292	-4.7
307	05:40	1.2361	-4.4
307	05:50	1.2431	-4.0
307	06:00	1.2500	-3.7
307	06:10	1.2569	-3.4
307	06:20	1.2639	-3.0
307	06:30	1.2708	-2.6
307	06:40	1.2778	-2.2
307	06:50	1.2847	-1.7
307	07:00	1.2917	-1.2
307	07:10	1.2986	-0.7
307	07:20	1.3056	-0.2
307	07:30	1.3125	0.3
307	07:40	1.3194	0.8
307	07:50	1.3264	1.3
307	08:00	1.3333	1.8
307	08:10	1.3403	2.3
307	08:20	1.3472	2.8
307	08:30	1.3542	3.2
307	08:40	1.3611	3.7
307	08:50	1.3681	4.2
307	09:00	1.3750	4.7
307	09:10	1.3819	5.1
307	09:20	1.3889	5.5
307	09:30	1.3958	5.8
307	09:40	1.4028	6.1
307	09:50	1.4097	6.4
307	10:00	1.4167	6.5
307	10:10	1.4236	6.7
307	10:20	1.4306	6.7
307	10:30	1.4375	6.8
307	10:40	1.4444	6.8
307	10:50	1.4514	6.7
307	11:00	1.4583	6.7
307	11:10	1.4653	6.5
307	11:20	1.4722	6.4
307	11:30	1.4792	6.2
307	11:40	1.4861	5.9
307	11:50	1.4931	5.7
307	12:00	1.5000	5.4
307	12:10	1.5069	5.1
307	12:20	1.5139	4.9
307	12:30	1.5208	4.5

(Continued)

Table 3. (Continued)

Julian Date	Time		Water-Level Elevation, ft
	hr	days	
307	12:40	1.5278	4.1
307	12:50	1.5347	3.7
307	13:00	1.5417	3.2
307	13:10	1.5486	2.7
307	13:20	1.5556	2.2
307	13:30	1.5625	1.7
307	13:40	1.5694	1.2
307	13:50	1.5764	0.7
307	14:00	1.5833	0.2
307	14:10	1.5903	-0.3
307	14:20	1.5972	-0.8
307	14:30	1.6042	-1.4
307	14:40	1.6111	-1.9
307	14:50	1.6181	-2.4
307	15:00	1.6250	-2.9
307	15:10	1.6319	-3.4
307	15:20	1.6389	-3.8
307	15:30	1.6458	-4.3
307	15:40	1.6528	-4.7
307	15:50	1.6597	-5.1
307	16:00	1.6667	-5.6
307	16:10	1.6736	-6.0
307	16:20	1.6806	-6.3
307	16:30	1.6875	-6.5
307	16:40	1.6944	-6.7
307	16:50	1.7014	-6.7
307	17:00	1.7083	-6.8
307	17:10	1.7153	-6.8
307	17:20	1.7222	-6.7
307	17:30	1.7292	-6.5
307	17:40	1.7361	-6.3
307	17:50	1.7431	-6.1
307	18:00	1.7500	-5.8
307	18:10	1.7569	-5.5
307	18:20	1.7639	-5.2
307	18:30	1.7708	-4.9
307	18:40	1.7778	-4.6
307	18:50	1.7847	-4.3
307	19:00	1.7917	-3.8
307	19:10	1.7986	-3.5
307	19:20	1.8056	-3.1
307	19:30	1.8125	-2.6
307	19:40	1.8194	-2.2
307	19:50	1.8264	-1.7
307	20:00	1.8333	-1.3
307	20:10	1.8403	-0.8
307	20:20	1.8472	-0.3
307	20:30	1.8542	0.2

(Continued)

Table 3. (Continued)

Julian Date	Time		Water-Level Elevation, ft
	hr	days	
307	20:40	1.8611	0.7
307	20:50	1.8681	1.2
307	21:00	1.8750	1.7
307	21:10	1.8819	2.2
307	21:20	1.8889	2.7
307	21:30	1.8958	3.2
307	21:40	1.9028	3.6
307	21:50	1.9097	4.0
307	22:00	1.9167	4.3
307	22:10	1.9236	4.6
307	22:20	1.9306	4.9
307	22:30	1.9375	5.1
307	22:40	1.9444	5.4
307	22:50	1.9514	5.5
307	23:00	1.9583	5.6
307	23:10	1.9653	5.7
307	23:20	1.9722	5.6
307	23:30	1.9792	5.5
307	23:40	1.9861	5.4
307	23:50	1.9931	5.3
308	00:00	2.0000	5.2
308	00:10	2.0069	5.0
308	00:20	2.0139	4.8
308	00:30	2.0208	4.6
308	00:40	2.0278	4.3
308	00:50	2.0347	4.0
308	01:00	2.0417	3.7
308	01:10	2.0486	3.3
308	01:20	2.0556	3.0
308	01:30	2.0625	2.6
308	01:40	2.0694	2.2
308	01:50	2.0764	1.8
308	02:00	2.0833	1.4
308	02:10	2.0903	1.0
308	02:20	2.0972	0.5
308	02:30	2.1042	0.0
308	02:40	2.1111	-0.4
308	02:50	2.1181	-0.8
308	03:00	2.1250	-1.3
308	03:10	2.1319	-1.8
308	03:20	2.1389	-2.3
308	03:30	2.1458	-2.7
308	03:40	2.1528	-3.2
308	03:50	2.1597	-3.6
308	04:00	2.1667	-3.9
308	04:10	2.1736	-4.3
308	04:20	2.1806	-4.6
308	04:30	2.1875	-4.9

(Continued)

Table 3. (Continued)

Julian Date	Time		Water-Level Elevation, ft
	hr	days	
308	04:40	2.1944	-5.1
308	04:50	2.2014	-5.3
308	05:00	2.2083	-5.4
308	05:10	2.2153	-5.5
308	05:20	2.2222	-5.4
308	05:30	2.2292	-5.3
308	05:40	2.2361	-5.2
308	05:50	2.2431	-5.1
308	06:00	2.2500	-4.9
308	06:10	2.2569	-4.6
308	06:20	2.2639	-4.3
308	06:30	2.2708	-3.9
308	06:40	2.2778	-3.5
308	06:50	2.2847	-3.2
308	07:00	2.2917	-2.8
308	07:10	2.2986	-2.5
308	07:20	2.3056	-2.0
308	07:30	2.3125	-1.6
308	07:40	2.3194	-1.1
308	07:50	2.3264	-0.7
308	08:00	2.3333	-0.2
308	08:10	2.3403	0.3
308	08:20	2.3472	0.7
308	08:30	2.3542	1.2
308	08:40	2.3611	1.7
308	08:50	2.3681	2.2
308	09:00	2.3750	2.7
308	09:10	2.3819	3.1
308	09:20	2.3889	3.7
308	09:30	2.3958	4.2
308	09:40	2.4028	4.6
308	09:50	2.4097	5.0
308	10:00	2.4167	5.4
308	10:10	2.4236	5.8
308	10:20	2.4306	6.1
308	10:30	2.4375	6.4
308	10:40	2.4444	6.6
308	10:50	2.4514	6.7
308	11:00	2.4583	6.8
308	11:10	2.4653	6.9
308	11:20	2.4722	7.0
308	11:30	2.4792	7.0
308	11:40	2.4861	7.0
308	11:50	2.4931	6.8
308	12:00	2.5000	6.7
308	12:10	2.5069	6.6
308	12:20	2.5139	6.4
308	12:30	2.5208	6.1

(Continued)

Table 3. (Continued)

Julian Date	Time		Water-Level Elevation, ft
	hr	days	
308	12:40	2.5278	5.9
308	12:50	2.5347	5.5
308	13:00	2.5417	5.1
308	13:10	2.5486	4.7
308	13:20	2.5556	4.4
308	13:30	2.5625	4.0
308	13:40	2.5694	3.5
308	13:50	2.5764	3.1
308	14:00	2.5833	2.5
308	14:10	2.5903	2.1
308	14:20	2.5972	1.6
308	14:30	2.6042	1.1
308	14:40	2.6111	0.6
308	14:50	2.6181	0.1
308	15:00	2.6250	-0.4
308	15:10	2.6319	-0.9
308	15:20	2.6389	-1.4
308	15:30	2.6458	-2.0
308	15:40	2.6528	-2.5
308	15:50	2.6597	-3.1
308	16:00	2.6667	-3.6
308	16:10	2.6736	-4.2
308	16:20	2.6806	-4.7
308	16:30	2.6875	-5.1
308	16:40	2.6944	-5.5
308	16:50	2.7014	-5.8
308	17:00	2.7083	-6.2
308	17:10	2.7153	-6.5
308	17:20	2.7222	-6.7
308	17:30	2.7292	-6.9
308	17:40	2.7361	-7.0
308	17:50	2.7431	-7.1
308	18:00	2.7500	-7.1
308	18:10	2.7569	-7.1
308	18:20	2.7639	-7.1
308	18:30	2.7708	-6.9
308	18:40	2.7778	-6.7
308	18:50	2.7847	-6.5
308	19:00	2.7917	-6.2
308	19:10	2.7986	-5.8
308	19:20	2.8056	-5.5
308	19:30	2.8125	-5.1
308	19:40	2.8194	-4.7
308	19:50	2.8264	-4.3
308	20:00	2.8333	-3.9
308	20:10	2.8403	-3.5
308	20:20	2.8472	-3.1
308	20:30	2.8542	-2.7

(Continued)

Table 3. (Continued)

Julian Date	Time		Water-Level Elevation, ft
	hr	days	
308	20:40	2.8611	-2.3
308	20:50	2.8681	-1.8
308	21:00	2.8750	-1.3
308	21:10	2.8819	-0.8
308	21:20	2.8889	-0.4
308	21:30	2.8958	0.1
308	21:40	2.9028	0.7
308	21:50	2.9097	1.1
308	22:00	2.9167	1.6
308	22:10	2.9236	2.1
308	22:20	2.9306	2.6
308	22:30	2.9375	3.0
308	22:40	2.9444	3.4
308	22:50	2.9514	3.7
308	23:00	2.9583	4.1
308	23:10	2.9653	4.3
308	23:20	2.9722	4.5
308	23:30	2.9792	4.7
308	23:40	2.9861	4.8
308	23:50	2.9931	5.0
309	00:00	3.0000	5.1
309	00:10	3.0069	5.1
309	00:20	3.0139	5.1
309	00:30	3.0208	5.0
309	00:40	3.0278	4.9
309	00:50	3.0347	4.8
309	01:00	3.0417	4.7
309	01:10	3.0486	4.5
309	01:20	3.0556	4.3
309	01:30	3.0625	4.0
309	01:40	3.0694	3.6
309	01:50	3.0764	3.3
309	02:00	3.0833	3.0
309	02:10	3.0903	2.7
309	02:20	3.0972	2.3
309	02:30	3.1042	1.9
309	02:40	3.1111	1.6
309	02:50	3.1181	1.2
309	03:00	3.1250	0.8
309	03:10	3.1319	0.4
309	03:20	3.1389	-0.0
309	03:30	3.1458	-0.5
309	03:40	3.1528	-1.1
309	03:50	3.1597	-1.6
309	04:00	3.1667	-2.1
309	04:10	3.1736	-2.5
309	04:20	3.1806	-2.9
309	04:30	3.1875	-3.3

(Continued)

Table 3. (Continued)

Julian Date	Time		Water-Level Elevation, ft
	hr	days	
309	04:40	3.1944	-3.7
309	04:50	3.2014	-4.1
309	05:00	3.2083	-4.4
309	05:10	3.2153	-4.8
309	05:20	3.2222	-5.0
309	05:30	3.2292	-5.3
309	05:40	3.2361	-5.6
309	05:50	3.2431	-5.8
309	06:00	3.2500	-5.9
309	06:10	3.2569	-6.0
309	06:20	3.2639	-5.9
309	06:30	3.2708	-5.7
309	06:40	3.2778	-5.5
309	06:50	3.2847	-5.3
309	07:00	3.2917	-5.0
309	07:10	3.2986	-4.6
309	07:20	3.3056	-4.2
309	07:30	3.3125	-3.8
309	07:40	3.3194	-3.5
309	07:50	3.3264	-3.2
309	08:00	3.3333	-2.8
309	08:10	3.3403	-2.4
309	08:20	3.3472	-2.0
309	08:30	3.3542	-1.6
309	08:40	3.3611	-1.1
309	08:50	3.3681	-0.6
309	09:00	3.3750	-0.1
309	09:10	3.3819	0.4
309	09:20	3.3889	0.9
309	09:30	3.3958	1.4
309	09:40	3.4028	1.9
309	09:50	3.4097	2.3
309	10:00	3.4167	2.7
309	10:10	3.4236	3.2
309	10:20	3.4306	3.7
309	10:30	3.4375	4.2
309	10:40	3.4444	4.7
309	10:50	3.4514	5.2
309	11:00	3.4583	5.6
309	11:10	3.4653	5.9
309	11:20	3.4722	6.2
309	11:30	3.4792	6.4
309	11:40	3.4861	6.6
309	11:50	3.4931	6.8
309	12:00	3.5000	7.0
309	12:10	3.5069	7.0
309	12:20	3.5139	7.0
309	12:30	3.5208	7.0

(Continued)

Table 3. (Continued)

Julian Date	Time		Water-Level Elevation, ft
	hr	days	
309	12:40	3.5278	7.0
309	12:50	3.5347	6.9
309	13:00	3.5417	6.7
309	13:10	3.5486	6.5
309	13:20	3.5556	6.3
309	13:30	3.5625	6.1
309	13:40	3.5694	5.8
309	13:50	3.5764	5.5
309	14:00	3.5833	5.2
309	14:10	3.5903	4.9
309	14:20	3.5972	4.6
309	14:30	3.6042	4.2
309	14:40	3.6111	3.8
309	14:50	3.6181	3.3
309	15:00	3.6250	2.8
309	15:10	3.6319	2.2
309	15:20	3.6389	1.7
309	15:30	3.6458	1.2
309	15:40	3.6528	0.7
309	15:50	3.6597	0.3
309	16:00	3.6667	-0.2
309	16:10	3.6736	-0.7
309	16:20	3.6806	-1.2
309	16:30	3.6875	-1.7
309	16:40	3.6944	-2.2
309	16:50	3.7014	-2.6
309	17:00	3.7083	-3.1
309	17:10	3.7153	-3.6
309	17:20	3.7222	-4.1
309	17:30	3.7292	-4.5
309	17:40	3.7361	-4.9
309	17:50	3.7431	-5.2
309	18:00	3.7500	-5.5
309	18:10	3.7569	-5.7
309	18:20	3.7639	-5.9
309	18:30	3.7708	-6.1
309	18:40	3.7778	-6.1
309	18:50	3.7847	-6.2
309	19:00	3.7917	-6.1
309	19:10	3.7986	-6.0
309	19:20	3.8056	-5.9
309	19:30	3.8125	-5.7
309	19:40	3.8194	-5.5
309	19:50	3.8264	-5.3
309	20:00	3.8333	-5.0
309	20:10	3.8403	-4.7
309	20:20	3.8472	-4.3
309	20:30	3.8542	-4.0

(Continued)

Table 3. (Continued)

Julian Date	Time		Water-Level Elevation, ft
	hr	days	
309	20:40	3.8611	-3.7
309	20:50	3.8681	-3.3
309	21:00	3.8750	-3.0
309	21:10	3.8819	-2.7
309	21:20	3.8889	-2.3
309	21:30	3.8958	-1.9
309	21:40	3.9028	-1.4
309	21:50	3.9097	-0.9
309	22:00	3.9167	-0.4
309	22:10	3.9236	0.0
309	22:20	3.9306	0.5
309	22:30	3.9375	1.0
309	22:40	3.9444	1.5
309	22:50	3.9514	1.9
309	23:00	3.9583	2.4
309	23:10	3.9653	2.8
309	23:20	3.9722	3.3
309	23:30	3.9792	3.7
309	23:40	3.9861	4.1
309	23:50	3.9931	4.4
310	00:00	4.0000	4.7
310	00:10	4.0069	4.9
310	00:20	4.0139	5.1
310	00:30	4.0208	5.3
310	00:40	4.0278	5.5
310	00:50	4.0347	5.5
310	01:00	4.0417	5.6
310	01:10	4.0486	5.6
310	01:20	4.0556	5.5
310	01:30	4.0625	5.4
310	01:40	4.0694	5.3
310	01:50	4.0764	5.1
310	02:00	4.0833	4.9
310	02:10	4.0903	4.7
310	02:20	4.0972	4.5
310	02:30	4.1042	4.3
310	02:40	4.1111	4.0
310	02:50	4.1181	3.6
310	03:00	4.1250	3.3
310	03:10	4.1319	2.9
310	03:20	4.1389	2.5
310	03:30	4.1458	2.2
310	03:40	4.1528	1.9
310	03:50	4.1597	1.6
310	04:00	4.1667	1.1
310	04:10	4.1736	0.7
310	04:20	4.1806	0.3
310	04:30	4.1875	-0.1

(Continued)

Table 3. (Continued)

Julian Date	Time		Water-Level Elevation, ft
	hr	days	
310	04:40	4.1944	-0.5
310	04:50	4.2014	-1.0
310	05:00	4.2083	-1.4
310	05:10	4.2153	-1.8
310	05:20	4.2222	-2.2
310	05:30	4.2292	-2.5
310	05:40	4.2361	-2.8
310	05:50	4.2431	-3.2
310	06:00	4.2500	-3.4
310	06:10	4.2569	-3.7
310	06:20	4.2639	-3.8
310	06:30	4.2708	-4.1
310	06:40	4.2778	-4.3
310	06:50	4.2847	-4.4
310	07:00	4.2917	-4.6
310	07:10	4.2986	-4.7
310	07:20	4.3056	-4.7
310	07:30	4.3125	-4.5
310	07:40	4.3194	-4.3
310	07:50	4.3264	-3.9
310	08:00	4.3333	-3.7
310	08:10	4.3403	-3.4
310	08:20	4.3472	-3.1
310	08:30	4.3542	-2.8
310	08:40	4.3611	-2.5
310	08:50	4.3681	-2.1
310	09:00	4.3750	-1.7
310	09:10	4.3819	-1.3
310	09:20	4.3889	-0.9
310	09:30	4.3958	-0.4
310	09:40	4.4028	0.0
310	09:50	4.4097	0.3
310	10:00	4.4167	0.7
310	10:10	4.4236	1.0
310	10:20	4.4306	1.3
310	10:30	4.4375	1.7
310	10:40	4.4444	2.3
310	10:50	4.4514	2.8
310	11:00	4.4583	3.3
310	11:10	4.4653	3.7
310	11:20	4.4722	4.1
310	11:30	4.4792	4.3
310	11:40	4.4861	4.7
310	11:50	4.4931	5.2
310	12:00	4.5000	5.6
310	12:10	4.5069	5.9
310	12:20	4.5139	6.1
310	12:30	4.5208	6.2

(Continued)

Table 3. (Continued)

Julian Date	Time		Water-Level Elevation, ft
	hr	days	
310	12:40	4.5278	6.1
310	12:50	4.5347	6.2
310	13:00	4.5417	6.3
310	13:10	4.5486	6.4
310	13:20	4.5556	6.5
310	13:30	4.5625	6.5
310	13:40	4.5694	6.4
310	13:50	4.5764	6.3
310	14:00	4.5833	6.1
310	14:10	4.5903	6.0
310	14:20	4.5972	5.8
310	14:30	4.6042	5.6
310	14:40	4.6111	5.2
310	14:50	4.6181	4.7
310	15:00	4.6250	4.2
310	15:10	4.6319	3.8
310	15:20	4.6389	3.4
310	15:30	4.6458	3.0
310	15:40	4.6528	2.6
310	15:50	4.6597	2.2
310	16:00	4.6667	1.8
310	16:10	4.6736	1.3
310	16:20	4.6806	0.9
310	16:30	4.6875	0.4
310	16:40	4.6944	-0.2
310	16:50	4.7014	-0.6
310	17:00	4.7083	-1.1
310	17:10	4.7153	-1.5
310	17:20	4.7222	-1.9
310	17:30	4.7292	-2.4
310	17:40	4.7361	-3.0
310	17:50	4.7431	-3.5
310	18:00	4.7500	-4.0
310	18:10	4.7569	-4.4
310	18:20	4.7639	-4.8
310	18:30	4.7708	-5.2
310	18:40	4.7778	-5.6
310	18:50	4.7847	-5.9
310	19:00	4.7917	-6.1
310	19:10	4.7986	-6.4
310	19:20	4.8056	-6.6
310	19:30	4.8125	-6.7
310	19:40	4.8194	-6.8
310	19:50	4.8264	-6.8
310	20:00	4.8333	-6.7
310	20:10	4.8403	-6.7
310	20:20	4.8472	-6.6
310	20:30	4.8542	-6.5

(Continued)

Table 3. (Continued)

Julian Date	Time		Water-Level Elevation, ft
	hr	days	
310	20:40	4.8611	-6.3
310	20:50	4.8681	-6.0
310	21:00	4.8750	-5.7
310	21:10	4.8819	-5.3
310	21:20	4.8889	-5.0
310	21:30	4.8958	-4.6
310	21:40	4.9028	-4.3
310	21:50	4.9097	-3.8
310	22:00	4.9167	-3.4
310	22:10	4.9236	-3.0
310	22:20	4.9306	-2.7
310	22:30	4.9375	-2.4
310	22:40	4.9444	-2.1
310	22:50	4.9514	-1.7
310	23:00	4.9583	-1.4
310	23:10	4.9653	-0.9
310	23:20	4.9722	-0.4
310	23:30	4.9792	0.1
310	23:40	4.9861	0.7
310	23:50	4.9931	1.1
311	00:00	5.0000	1.5
311	00:10	5.0069	1.8
311	00:20	5.0139	2.2
311	00:30	5.0208	2.5
311	00:40	5.0278	2.9
311	00:50	5.0347	3.2
311	01:00	5.0417	3.5
311	01:10	5.0486	3.7
311	01:20	5.0556	3.9
311	01:30	5.0625	4.0
311	01:40	5.0694	4.2
311	01:50	5.0764	4.3
311	02:00	5.0833	4.4
311	02:10	5.0903	4.4
311	02:20	5.0972	4.3
311	02:30	5.1042	4.4
311	02:40	5.1111	4.3
311	02:50	5.1181	4.3
311	03:00	5.1250	4.1
311	03:10	5.1319	3.9
311	03:20	5.1389	3.6
311	03:30	5.1458	3.4
311	03:40	5.1528	3.1
311	03:50	5.1597	2.8
311	04:00	5.1667	2.5
311	04:10	5.1736	2.1
311	04:20	5.1806	1.7
311	04:30	5.1875	1.4

(Continued)

Table 3. (Concluded)

Julian Date	Time		Water-Level Elevation, ft
	hr	days	
311	04:40	5.1944	1.0
311	04:50	5.2014	0.7
311	05:00	5.2083	0.3
311	05:10	5.2153	-0.1
311	05:20	5.2222	-0.5
311	05:30	5.2292	-1.0
311	05:40	5.2361	-1.4
311	05:50	5.2431	-1.8
311	06:00	5.2500	-2.2
311	06:10	5.2569	-2.7
311	06:20	5.2639	-3.1
311	06:30	5.2708	-3.6
311	06:40	5.2778	-3.9
311	06:50	5.2847	-4.2
311	07:00	5.2917	-4.4
311	07:10	5.2986	-4.7
311	07:20	5.3056	-4.9
311	07:30	5.3125	-5.1

Table 4
Water-Level Elevation, Station S9.5
2-7 November 1990

Julian Date	Time		Water-Level Elevation * ft
	hr	days	
306	10:10	0.4236	1.4
306	10:20	0.4306	6.0
306	10:30	0.4375	5.9
306	10:40	0.4444	5.7
306	10:50	0.4514	5.5
306	11:00	0.4583	5.3
306	11:10	0.4653	5.1
306	11:20	0.4722	4.8
306	11:30	0.4792	4.5
306	11:40	0.4861	4.2
306	11:50	0.4931	3.8
306	12:00	0.5000	3.4
306	12:10	0.5069	3.0
306	12:20	0.5139	2.5
306	12:30	0.5208	2.0
306	12:40	0.5278	1.5
306	12:50	0.5347	1.1
306	13:00	0.5417	0.6
306	13:10	0.5486	0.2
306	13:20	0.5556	-0.3
306	13:30	0.5625	-0.8
306	13:40	0.5694	-1.3
306	13:50	0.5764	-1.8
306	14:00	0.5833	-2.3
306	14:10	0.5903	-2.8
306	14:20	0.5972	-3.3
306	14:30	0.6042	-3.8
306	14:40	0.6111	-4.3
306	14:50	0.6181	-4.7
306	15:00	0.6250	-5.1
306	15:10	0.6319	-5.4
306	15:20	0.6389	-5.8
306	15:30	0.6458	-6.0
306	15:40	0.6528	-6.3
306	15:50	0.6597	-6.5
306	16:00	0.6667	-6.6
306	16:10	0.6736	-6.6
306	16:20	0.6806	-6.6
306	16:30	0.6875	-6.6
306	16:40	0.6944	-6.4
306	16:50	0.7014	-6.2
306	17:00	0.7083	-6.0
306	17:10	0.7153	-5.8

(Continued)

* Mean water-level elevation used as datum.

Table 4. (Continued)

Julian Date	Time		Water-Level Elevation, ft
	hr	days	
306	17:20	0.7222	-5.4
306	17:30	0.7292	-5.1
306	17:40	0.7361	-4.7
306	17:50	0.7431	-4.4
306	18:00	0.7500	-4.1
306	18:10	0.7569	-3.8
306	18:20	0.7639	-3.4
306	18:30	0.7708	-3.0
306	18:40	0.7778	-2.7
306	18:50	0.7847	-2.2
306	19:00	0.7917	-1.8
306	19:10	0.7986	-1.3
306	19:20	0.8056	-0.8
306	19:30	0.8125	-0.4
306	19:40	0.8194	0.0
306	19:50	0.8264	0.5
306	20:00	0.8333	0.9
306	20:10	0.8403	1.4
306	20:20	0.8472	1.9
306	20:30	0.8542	2.4
306	20:40	0.8611	2.8
306	20:50	0.8681	3.2
306	21:00	0.8750	3.6
306	21:10	0.8819	3.9
306	21:20	0.8889	4.2
306	21:30	0.8958	4.5
306	21:40	0.9028	4.8
306	21:50	0.9097	4.9
306	22:00	0.9167	5.0
306	22:10	0.9236	5.1
306	22:20	0.9306	5.1
306	22:30	0.9375	5.1
306	22:40	0.9444	5.1
306	22:50	0.9514	5.0
306	23:00	0.9583	4.8
306	23:10	0.9653	4.6
306	23:20	0.9722	4.4
306	23:30	0.9792	4.2
306	23:40	0.9861	4.0
306	23:50	0.9931	3.7
307	00:00	1.0000	3.4
307	00:10	1.0069	3.0
307	00:20	1.0139	2.7
307	00:30	1.0208	2.3
307	00:40	1.0278	2.0
307	00:50	1.0347	1.6
307	01:00	1.0417	1.2
307	01:10	1.0486	0.8

(Continued)

Table 4. (Continued)

Julian Date	Time		Water-Level Elevation, ft
	hr	days	
307	01:20	1.0556	0.4
307	01:30	1.0625	-0.0
307	01:40	1.0694	-0.4
307	01:50	1.0764	-0.9
307	02:00	1.0833	-1.4
307	02:10	1.0903	-1.9
307	02:20	1.0972	-2.3
307	02:30	1.1042	-2.8
307	02:40	1.1111	-3.3
307	02:50	1.1181	-3.7
307	03:00	1.1250	-4.1
307	03:10	1.1319	-4.4
307	03:20	1.1389	-4.8
307	03:30	1.1458	-5.1
307	03:40	1.1528	-5.4
307	03:50	1.1597	-5.6
307	04:00	1.1667	-5.8
307	04:10	1.1736	-6.0
307	04:20	1.1806	-6.1
307	04:30	1.1875	-6.1
307	04:40	1.1944	-6.1
307	04:50	1.2014	-6.0
307	05:00	1.2083	-5.7
307	05:10	1.2153	-5.5
307	05:20	1.2222	-5.2
307	05:30	1.2292	-4.8
307	05:40	1.2361	-4.5
307	05:50	1.2431	-4.1
307	06:00	1.2500	-3.8
307	06:10	1.2569	-3.4
307	06:20	1.2639	-3.1
307	06:30	1.2708	-2.7
307	06:40	1.2778	-2.3
307	06:50	1.2847	-1.8
307	07:00	1.2917	-1.3
307	07:10	1.2986	-0.8
307	07:20	1.3056	-0.3
307	07:30	1.3125	0.2
307	07:40	1.3194	0.7
307	07:50	1.3264	1.2
307	08:00	1.3333	1.7
307	08:10	1.3403	2.1
307	08:20	1.3472	2.6
307	08:30	1.3542	3.1
307	08:40	1.3611	3.6
307	08:50	1.3681	4.1
307	09:00	1.3750	4.5
307	09:10	1.3819	5.0
307	09:20	1.3889	5.3

(Continued)

(Sheet 3 of 10)

Table 4. (Continued)

Julian Date	Time		Water-Level Elevation, ft
	hr	days	
307	09:30	1.3958	5.7
307	09:40	1.4028	5.9
307	09:50	1.4097	6.2
307	10:00	1.4167	6.4
307	10:10	1.4236	6.5
307	10:20	1.4306	6.6
307	10:30	1.4375	6.7
307	10:40	1.4444	6.7
307	10:50	1.4514	6.6
307	11:00	1.4583	6.5
307	11:10	1.4653	6.4
307	11:20	1.4722	6.3
307	11:30	1.4792	6.0
307	11:40	1.4861	5.8
307	11:50	1.4931	5.6
307	12:00	1.5000	5.3
307	12:10	1.5069	5.0
307	12:20	1.5139	4.7
307	12:30	1.5208	4.4
307	12:40	1.5278	4.0
307	12:50	1.5347	3.5
307	13:00	1.5417	3.1
307	13:10	1.5486	2.6
307	13:20	1.5556	2.1
307	13:30	1.5625	1.6
307	13:40	1.5694	1.1
307	13:50	1.5764	0.6
307	14:00	1.5833	0.2
307	14:10	1.5903	-0.3
307	14:20	1.5972	-0.9
307	14:30	1.6042	-1.4
307	14:40	1.6111	-2.0
307	14:50	1.6181	-2.5
307	15:00	1.6250	-3.0
307	15:10	1.6319	-3.5
307	15:20	1.6389	-3.9
307	15:30	1.6458	-4.4
307	15:40	1.6528	-4.7
307	15:50	1.6597	-5.2
307	16:00	1.6667	-5.6
307	16:10	1.6736	-6.0
307	16:20	1.6806	-6.3
307	16:30	1.6875	-6.5
307	16:40	1.6944	-6.7
307	16:50	1.7014	-6.8
307	17:00	1.7083	-6.9
307	17:10	1.7153	-6.8
307	17:20	1.7222	-6.7

(Continued)

Table 4. (Continued)

Julian Date	Time		Water-Level Elevation, ft
	hr	days	
307	17:30	1.7292	-6.6
307	17:40	1.7361	-6.4
307	17:50	1.7431	-6.1
307	18:00	1.7500	-5.8
307	18:10	1.7569	-5.6
307	18:20	1.7639	-5.3
307	18:30	1.7708	-5.0
307	18:40	1.7778	-4.7
307	18:50	1.7847	-4.3
307	19:00	1.7917	-3.9
307	19:10	1.7986	-3.6
307	19:20	1.8056	-3.2
307	19:30	1.8125	-2.7
307	19:40	1.8194	-2.3
307	19:50	1.8264	-1.9
307	20:00	1.8333	-1.4
307	20:10	1.8403	-0.9
307	20:20	1.8472	-0.4
307	20:30	1.8542	0.0
307	20:40	1.8611	0.6
307	20:50	1.8681	1.0
307	21:00	1.8750	1.5
307	21:10	1.8819	2.0
307	21:20	1.8889	2.5
307	21:30	1.8958	3.0
307	21:40	1.9028	3.4
307	21:50	1.9097	3.9
307	22:00	1.9167	4.2
307	22:10	1.9236	4.5
307	22:20	1.9306	4.8
307	22:30	1.9375	5.0
307	22:40	1.9444	5.2
307	22:50	1.9514	5.4
307	23:00	1.9583	5.5
307	23:10	1.9653	5.5
307	23:20	1.9722	5.4
307	23:30	1.9792	5.4
307	23:40	1.9861	5.3
307	23:50	1.9931	5.2
308	00:00	2.0000	5.1
308	00:10	2.0069	4.8
308	00:20	2.0139	4.7
308	00:30	2.0208	4.4
308	00:40	2.0278	4.2
308	00:50	2.0347	3.9
308	01:00	2.0417	3.6
308	01:10	2.0486	3.2
308	01:20	2.0556	2.8

(Continued)

Table 4. (Continued)

Julian Date	Time		Water-Level Elevation, ft
	hr	days	
308	01:30	2.0625	2.5
308	01:40	2.0694	2.1
308	01:50	2.0764	1.8
308	02:00	2.0833	1.4
308	02:10	2.0903	0.9
308	02:20	2.0972	0.4
308	02:30	2.1042	-0.0
308	02:40	2.1111	-0.5
308	02:50	2.1181	-0.9
308	03:00	2.1250	-1.4
308	03:10	2.1319	-1.9
308	03:20	2.1389	-2.3
308	03:30	2.1458	-2.8
308	03:40	2.1528	-3.3
308	03:50	2.1597	-3.7
308	04:00	2.1667	-4.0
308	04:10	2.1736	-4.3
308	04:20	2.1806	-4.7
308	04:30	2.1875	-5.0
308	04:40	2.1944	-5.2
308	04:50	2.2014	-5.4
308	05:00	2.2083	-5.5
308	05:10	2.2153	-5.6
308	05:20	2.2222	-5.5
308	05:30	2.2292	-5.4
308	05:40	2.2361	-5.3
308	05:50	2.2431	-5.1
308	06:00	2.2500	-5.0
308	06:10	2.2569	-4.7
308	06:20	2.2639	-4.4
308	06:30	2.2708	-4.0
308	06:40	2.2778	-3.6
308	06:50	2.2847	-3.3
308	07:00	2.2917	-2.9
308	07:10	2.2986	-2.5
308	07:20	2.3056	-2.1
308	07:30	2.3125	-1.7
308	07:40	2.3194	-1.2
308	07:50	2.3264	-0.8
308	08:00	2.3333	-0.3
308	08:10	2.3403	0.2
308	08:20	2.3472	0.6
308	08:30	2.3542	1.1
308	08:40	2.3611	1.5
308	08:50	2.3681	2.0
308	09:00	2.3750	2.5
308	09:10	2.3819	3.0
308	09:20	2.3889	3.5

(Continued)

Table 4. (Continued)

Julian Date	Time		Water-Level Elevation, ft
	hr	days	
308	09:30	2.3958	4.0
308	09:40	2.4028	4.5
308	09:50	2.4097	4.9
308	10:00	2.4167	5.3
308	10:10	2.4236	5.7
308	10:20	2.4306	6.0
308	10:30	2.4375	6.2
308	10:40	2.4444	6.5
308	10:50	2.4514	6.6
308	11:00	2.4583	6.7
308	11:10	2.4653	6.8
308	11:20	2.4722	6.9
308	11:30	2.4792	6.9
308	11:40	2.4861	6.8
308	11:50	2.4931	6.7
308	12:00	2.5000	6.5
308	12:10	2.5069	6.4
308	12:20	2.5139	6.2
308	12:30	2.5208	6.0
308	12:40	2.5278	5.7
308	12:50	2.5347	5.4
308	13:00	2.5417	5.0
308	13:10	2.5486	4.6
308	13:20	2.5556	4.2
308	13:30	2.5625	3.9
308	13:40	2.5694	3.4
308	13:50	2.5764	2.9
308	14:00	2.5833	2.4
308	14:10	2.5903	2.0
308	14:20	2.5972	1.5
308	14:30	2.6042	1.1
308	14:40	2.6111	0.5
308	14:50	2.6181	0.0
308	15:00	2.6250	-0.5
308	15:10	2.6319	-1.0
308	15:20	2.6389	-1.5
308	15:30	2.6458	-2.1
308	15:40	2.6528	-2.6
308	15:50	2.6597	-3.1
308	16:00	2.6667	-3.7
308	16:10	2.6736	-4.2
308	16:20	2.6806	-4.7
308	16:30	2.6875	-5.2
308	16:40	2.6944	-5.5
308	16:50	2.7014	-5.9
308	17:00	2.7083	-6.2
308	17:10	2.7153	-6.6
308	17:20	2.7222	-6.8

(Continued)

Table 4. (Continued)

Julian Date	Time		Water-Level Elevation, ft
	hr	days	
308	17:30	2.7292	-7.0
308	17:40	2.7361	-7.1
308	17:50	2.7431	-7.1
308	18:00	2.7500	-7.1
308	18:10	2.7569	-7.2
308	18:20	2.7639	-7.1
308	18:30	2.7708	-7.0
308	18:40	2.7778	-6.8
308	18:50	2.7847	-6.6
308	19:00	2.7917	-6.2
308	19:10	2.7986	-5.9
308	19:20	2.8056	-5.6
308	19:30	2.8125	-5.2
308	19:40	2.8194	-4.8
308	19:50	2.8264	-4.4
308	20:00	2.8333	-4.0
308	20:10	2.8403	-3.6
308	20:20	2.8472	-3.3
308	20:30	2.8542	-2.8
308	20:40	2.8611	-2.4
308	20:50	2.8681	-2.0
308	21:00	2.8750	-1.5
308	21:10	2.8819	-1.0
308	21:20	2.8889	-0.5
308	21:30	2.8958	-0.0
308	21:40	2.9028	0.5
308	21:50	2.9097	1.0
308	22:00	2.9167	1.5
308	22:10	2.9236	2.0
308	22:20	2.9306	2.4
308	22:30	2.9375	2.8
308	22:40	2.9444	3.2
308	22:50	2.9514	3.6
308	23:00	2.9583	3.9
308	23:10	2.9653	4.2
308	23:20	2.9722	4.4
308	23:30	2.9792	4.5
308	23:40	2.9861	4.7
308	23:50	2.9931	4.9
309	00:00	3.0000	5.0
309	00:10	3.0069	5.0
309	00:20	3.0139	5.0
309	00:30	3.0208	4.9
309	00:40	3.0278	4.8
309	00:50	3.0347	4.7
309	01:00	3.0417	4.6
309	01:10	3.0486	4.4
309	01:20	3.0556	4.1

(Continued)

Table 4. (Continued)

Julian Date	Time		Water-Level Elevation, ft
	hr	days	
309	01:30	3.0625	3.8
309	01:40	3.0694	3.5
309	01:50	3.0764	3.2
309	02:00	3.0833	2.9
309	02:10	3.0903	2.6
309	02:20	3.0972	2.2
309	02:30	3.1042	1.8
309	02:40	3.1111	1.5
309	02:50	3.1181	1.1
309	03:00	3.1250	0.7
309	03:10	3.1319	0.4
309	03:20	3.1389	-0.1
309	03:30	3.1458	-0.6
309	03:40	3.1528	-1.2
309	03:50	3.1597	-1.7
309	04:00	3.1667	-2.2
309	04:10	3.1736	-2.6
309	04:20	3.1806	-3.0
309	04:30	3.1875	-3.4
309	04:40	3.1944	-3.8
309	04:50	3.2014	-4.2
309	05:00	3.2083	-4.5
309	05:10	3.2153	-4.8
309	05:20	3.2222	-5.1
309	05:30	3.2292	-5.4
309	05:40	3.2361	-5.7
309	05:50	3.2431	-5.9
309	06:00	3.2500	-6.1
309	06:10	3.2569	-6.1
309	06:20	3.2639	-6.0
309	06:30	3.2708	-5.9
309	06:40	3.2778	-5.7
309	06:50	3.2847	-5.4
309	07:00	3.2917	-5.1
309	07:10	3.2986	-4.7
309	07:20	3.3056	-4.3
309	07:30	3.3125	-4.0
309	07:40	3.3194	-3.6
309	07:50	3.3264	-3.3
309	08:00	3.3333	-2.9
309	08:10	3.3403	-2.5
309	08:20	3.3472	-2.2
309	08:30	3.3542	-1.7
309	08:40	3.3611	-1.3
309	08:50	3.3681	-0.7
309	09:00	3.3750	-0.2
309	09:10	3.3819	0.3
309	09:20	3.3889	0.8

(Continued)

Table 4. (Continued)

Julian Date	Time		Water-Level Elevation, ft
	hr	days	
309	09:30	3.3958	1.3
309	09:40	3.4028	1.7
309	09:50	3.4097	2.1
309	10:00	3.4167	2.6
309	10:10	3.4236	3.1
309	10:20	3.4306	3.5
309	10:30	3.4375	4.1
309	10:40	3.4444	4.6
309	10:50	3.4514	5.1
309	11:00	3.4583	5.4
309	11:10	3.4653	5.8
309	11:20	3.4722	6.0
309	11:30	3.4792	6.2
309	11:40	3.4861	6.5
309	11:50	3.4931	6.6
309	12:00	3.5000	6.8
309	12:10	3.5069	6.9
309	12:20	3.5139	6.9
309	12:30	3.5208	6.9
309	12:40	3.5278	6.8
309	12:50	3.5347	6.7
309	13:00	3.5417	6.5
309	13:10	3.5486	6.4
309	13:20	3.5556	6.1
309	13:30	3.5625	5.9
309	13:40	3.5694	5.6
309	13:50	3.5764	5.4
309	14:00	3.5833	5.1
309	14:10	3.5903	4.8
309	14:20	3.5972	4.4
309	14:30	3.6042	4.1
309	14:40	3.6111	3.7
309	14:50	3.6181	3.2
309	15:00	3.6250	2.7
309	15:10	3.6319	2.1
309	15:20	3.6389	1.5
309	15:30	3.6458	1.1
309	15:40	3.6528	0.6
309	15:50	3.6597	0.2
309	16:00	3.6667	-0.3
309	16:10	3.6736	-0.9
309	16:20	3.6806	-1.4
309	16:30	3.6875	-1.9
309	16:40	3.6944	-2.3
309	16:50	3.7014	-2.8
309	17:00	3.7083	-3.2
309	17:10	3.7153	-3.7
309	17:20	3.7222	-4.2

(Continued)

Table 4. (Continued)

Julian Date	Time		Water-Level Elevation, ft
	hr	days	
309	17:30	3.7292	-4.6
309	17:40	3.7361	-5.1
309	17:50	3.7431	-5.4
309	18:00	3.7500	-5.7
309	18:10	3.7569	-5.9
309	18:20	3.7639	-6.1
309	18:30	3.7708	-6.2
309	18:40	3.7778	-6.3
309	18:50	3.7847	-6.3
309	19:00	3.7917	-6.3
309	19:10	3.7986	-6.2
309	19:20	3.8056	-6.0
309	19:30	3.8125	-5.9
309	19:40	3.8194	-5.7
309	19:50	3.8264	-5.4
309	20:00	3.8333	-5.2
309	20:10	3.8403	-4.8
309	20:20	3.8472	-4.5
309	20:30	3.8542	-4.2
309	20:40	3.8611	-3.8
309	20:50	3.8681	-3.5
309	21:00	3.8750	-3.2
309	21:10	3.8819	-2.9
309	21:20	3.8889	-2.5
309	21:30	3.8958	-2.1
309	21:40	3.9028	-1.6
309	21:50	3.9097	-1.1
309	22:00	3.9167	-0.6
309	22:10	3.9236	-0.2
309	22:20	3.9306	0.3
309	22:30	3.9375	0.8
309	22:40	3.9444	1.3
309	22:50	3.9514	1.7
309	23:00	3.9583	2.1
309	23:10	3.9653	2.6
309	23:20	3.9722	3.1
309	23:30	3.9792	3.5
309	23:40	3.9861	3.9
309	23:50	3.9931	4.3
310	00:00	4.0000	4.5
310	00:10	4.0069	4.7
310	00:20	4.0139	4.9
310	00:30	4.0208	5.1
310	00:40	4.0278	5.3
310	00:50	4.0347	5.4
310	01:00	4.0417	5.4
310	01:10	4.0486	5.4
310	01:20	4.0556	5.4

(Continued)

Table 4. (Continued)

Julian Date	Time		Water-Level Elevation, ft
	hr	days	
310	01:30	4.0625	5.3
310	01:40	4.0694	5.1
310	01:50	4.0764	5.0
310	02:00	4.0833	4.7
310	02:10	4.0903	4.5
310	02:20	4.0972	4.3
310	02:30	4.1042	4.1
310	02:40	4.1111	3.9
310	02:50	4.1181	3.4
310	03:00	4.1250	3.1
310	03:10	4.1319	2.7
310	03:20	4.1389	2.3
310	03:30	4.1458	2.1
310	03:40	4.1528	1.8
310	03:50	4.1597	1.4
310	04:00	4.1667	1.0
310	04:10	4.1736	0.6
310	04:20	4.1806	0.2
310	04:30	4.1875	-0.3
310	04:40	4.1944	-0.7
310	04:50	4.2014	-1.1
310	05:00	4.2083	-1.5
310	05:10	4.2153	-1.9
310	05:20	4.2222	-2.3
310	05:30	4.2292	-2.6
310	05:40	4.2361	-3.0
310	05:50	4.2431	-3.3
310	06:00	4.2500	-3.6
310	06:10	4.2569	-3.8
310	06:20	4.2639	-4.0
310	06:30	4.2708	-4.2
310	06:40	4.2778	-4.4
310	06:50	4.2847	-4.5
310	07:00	4.2917	-4.7
310	07:10	4.2986	-4.8
310	07:20	4.3056	-4.8
310	07:30	4.3125	-4.7
310	07:40	4.3194	-4.3
310	07:50	4.3264	-4.1
310	08:00	4.3333	-3.8
310	08:10	4.3403	-3.5
310	08:20	4.3472	-3.3
310	08:30	4.3542	-2.9
310	08:40	4.3611	-2.7
310	08:50	4.3681	-2.3
310	09:00	4.3750	-1.8
310	09:10	4.3819	-1.4
310	09:20	4.3889	-1.0

(Continued)

Table 4. (Continued)

Julian Date	Time		Water-Level Elevation, ft
	hr	days	
310	09:30	4.3958	-0.6
310	09:40	4.4028	-0.2
310	09:50	4.4097	0.2
310	10:00	4.4167	0.5
310	10:10	4.4236	0.9
310	10:20	4.4306	1.1
310	10:30	4.4375	1.5
310	10:40	4.4444	2.1
310	10:50	4.4514	2.7
310	11:00	4.4583	3.2
310	11:10	4.4653	3.6
310	11:20	4.4722	3.9
310	11:30	4.4792	4.2
310	11:40	4.4861	4.5
310	11:50	4.4931	5.0
310	12:00	4.5000	5.5
310	12:10	4.5069	5.8
310	12:20	4.5139	5.9
310	12:30	4.5208	6.1
310	12:40	4.5278	6.0
310	12:50	4.5347	6.0
310	13:00	4.5417	6.2
310	13:10	4.5486	6.2
310	13:20	4.5556	6.4
310	13:30	4.5625	6.4
310	13:40	4.5694	6.3
310	13:50	4.5764	6.1
310	14:00	4.5833	5.9
310	14:10	4.5903	5.9
310	14:20	4.5972	5.8
310	14:30	4.6042	5.5
310	14:40	4.6111	5.1
310	14:50	4.6181	4.5
310	15:00	4.6250	4.1
310	15:10	4.6319	3.7
310	15:20	4.6389	3.3
310	15:30	4.6458	2.9
310	15:40	4.6528	2.5
310	15:50	4.6597	2.1
310	16:00	4.6667	1.7
310	16:10	4.6736	1.3
310	16:20	4.6806	0.8
310	16:30	4.6875	0.3
310	16:40	4.6944	-0.2
310	16:50	4.7014	-0.7
310	17:00	4.7083	-1.1
310	17:10	4.7153	-1.6
310	17:20	4.7222	-2.0

(Continue 1)

Table 4. (Continued)

Julian Date	Time		Water-Level Elevation, ft
	hr	days	
310	17:30	4.7292	-2.5
310	17:40	4.7361	-3.0
310	17:50	4.7431	-3.6
310	18:00	4.7500	-4.1
310	18:10	4.7569	-4.5
310	18:20	4.7639	-5.0
310	18:30	4.7708	-5.3
310	18:40	4.7778	-5.6
310	18:50	4.7847	-6.0
310	19:00	4.7917	-6.3
310	19:10	4.7986	-6.5
310	19:20	4.8056	-6.8
310	19:30	4.8125	-6.9
310	19:40	4.8194	-6.9
310	19:50	4.8264	-6.9
310	20:00	4.8333	-6.9
310	20:10	4.8403	-6.8
310	20:20	4.8472	-6.7
310	20:30	4.8542	-6.7
310	20:40	4.8611	-6.4
310	20:50	4.8681	-6.2
310	21:00	4.8750	-5.8
310	21:10	4.8819	-5.4
310	21:20	4.8889	-5.1
310	21:30	4.8958	-4.8
310	21:40	4.9028	-4.4
310	21:50	4.9097	-4.0
310	22:00	4.9167	-3.6
310	22:10	4.9236	-3.2
310	22:20	4.9306	-2.8
310	22:30	4.9375	-2.5
310	22:40	4.9444	-2.2
310	22:50	4.9514	-1.9
310	23:00	4.9583	-1.6
310	23:10	4.9653	-1.1
310	23:20	4.9722	-0.6
310	23:30	4.9792	-0.0
310	23:40	4.9861	0.5
310	23:50	4.9931	0.9
311	00:00	5.0000	1.3
311	00:10	5.0069	1.6
311	00:20	5.0139	2.0
311	00:30	5.0208	2.4
311	00:40	5.0278	2.8
311	00:50	5.0347	3.1
311	01:00	5.0417	3.4
311	01:10	5.0486	3.6
311	01:20	5.0556	3.7

(Continued)

Table 4. (Concluded)

Julian Date	Time		Water-Level Elevation, ft
	hr	days	
311	01:30	5.0625	3.9
311	01:40	5.0694	4.2
311	01:50	5.0764	4.3
311	02:00	5.0833	4.3
311	02:10	5.0903	4.2
311	02:20	5.0972	4.2
311	02:30	5.1042	4.2
311	02:40	5.1111	4.2
311	02:50	5.1181	4.2
311	03:00	5.1250	4.1
311	03:10	5.1319	3.9
311	03:20	5.1389	3.5
311	03:30	5.1458	3.2
311	03:40	5.1528	3.0
311	03:50	5.1597	2.7
311	04:00	5.1667	2.4
311	04:10	5.1736	2.0
311	04:20	5.1806	1.6
311	04:30	5.1875	1.3
311	04:40	5.1944	0.9
311	04:50	5.2014	0.6
311	05:00	5.2083	0.3
311	05:10	5.2153	-0.2
311	05:20	5.2222	-0.6
311	05:30	5.2292	-1.1
311	05:40	5.2361	-1.5
311	05:50	5.2431	-1.9
311	06:00	5.2500	-2.4
311	06:10	5.2569	-2.8
311	06:20	5.2639	-3.2
311	06:30	5.2708	-3.7
311	06:40	5.2778	-4.0
311	06:50	5.2847	-4.3

Table 5
Water-Level Elevation, Station S12.5
2-7 November 1990

Julian Date	Time		Water-Level Elevation,* ft
	hr	days	
306	12:50	0.5347	-1.4
306	13:00	0.5417	0.6
306	13:10	0.5486	0.2
306	13:20	0.5556	-0.3
306	13:30	0.5625	-0.8
306	13:40	0.5694	-1.2
306	13:50	0.5764	-1.7
306	14:00	0.5833	-2.3
306	14:10	0.5903	-2.7
306	14:20	0.5972	-3.1
306	14:30	0.6042	-3.7
306	14:40	0.6111	-4.2
306	14:50	0.6181	-4.6
306	15:00	0.6250	-5.0
306	15:10	0.6319	-5.3
306	15:20	0.6389	-5.6
306	15:30	0.6458	-5.9
306	15:40	0.6528	-6.1
306	15:50	0.6597	-6.3
306	16:00	0.6667	-6.5
306	16:10	0.6736	-6.5
306	16:20	0.6806	-6.5
306	16:30	0.6875	-6.5
306	16:40	0.6944	-6.4
306	16:50	0.7014	-6.1
306	17:00	0.7083	-5.9
306	17:10	0.7153	-5.7
306	17:20	0.7222	-5.3
306	17:30	0.7292	-4.9
306	17:40	0.7361	-4.6
306	17:50	0.7431	-4.3
306	18:00	0.7500	-3.9
306	18:10	0.7569	-3.6
306	18:20	0.7639	-3.3
306	18:30	0.7708	-2.9
306	18:40	0.7778	-2.5
306	18:50	0.7847	-2.1
306	19:00	0.7917	-1.6
306	19:10	0.7986	-1.1
306	19:20	0.8056	-0.7
306	19:30	0.8125	-0.2
306	19:40	0.8194	0.2
306	19:50	0.8264	0.6

(Continued)

* Mean water-level elevation used as datum.

Table 5. (Continued)

Julian Date	Time		Water-Level Elevation, ft
	hr	days	
306	20:00	0.8333	1.1
306	20:10	0.8403	1.6
306	20:20	0.8472	2.1
306	20:30	0.8542	2.5
306	20:40	0.8611	3.0
306	20:50	0.8681	3.4
306	21:00	0.8750	3.7
306	21:10	0.8819	4.1
306	21:20	0.8889	4.4
306	21:30	0.8958	4.6
306	21:40	0.9028	4.9
306	21:50	0.9097	5.1
306	22:00	0.9167	5.2
306	22:10	0.9236	5.2
306	22:20	0.9306	5.2
306	22:30	0.9375	5.2
306	22:40	0.9444	5.2
306	22:50	0.9514	5.1
306	23:00	0.9583	5.0
306	23:10	0.9653	4.8
306	23:20	0.9722	4.6
306	23:30	0.9792	4.4
306	23:40	0.9861	4.1
306	23:50	0.9931	3.8
307	00:00	1.0000	3.5
307	00:10	1.0069	3.1
307	00:20	1.0139	2.8
307	00:30	1.0208	2.5
307	00:40	1.0278	2.1
307	00:50	1.0347	1.7
307	01:00	1.0417	1.3
307	01:10	1.0486	0.9
307	01:20	1.0556	0.5
307	01:30	1.0625	0.1
307	01:40	1.0694	-0.4
307	01:50	1.0764	-0.8
307	02:00	1.0833	-1.2
307	02:10	1.0903	-1.7
307	02:20	1.0972	-2.2
307	02:30	1.1042	-2.8
307	02:40	1.1111	-3.2
307	02:50	1.1181	-3.7
307	03:00	1.1250	-4.0
307	03:10	1.1319	-4.3
307	03:20	1.1389	-4.7
307	03:30	1.1458	-5.0
307	03:40	1.1528	-5.3
307	03:50	1.1597	-5.5

(Continued)

Table 5. (Continued)

Julian Date	Time		Water-Level Elevation, ft
	hr	days	
307	04:00	1.1667	-5.8
307	04:10	1.1736	-6.0
307	04:20	1.1806	-6.1
307	04:30	1.1875	-6.1
307	04:40	1.1944	-6.0
307	04:50	1.2014	-5.9
307	05:00	1.2083	-5.7
307	05:10	1.2153	-5.4
307	05:20	1.2222	-5.2
307	05:30	1.2292	-4.8
307	05:40	1.2361	-4.3
307	05:50	1.2431	-4.0
307	06:00	1.2500	-3.7
307	06:10	1.2569	-3.3
307	06:20	1.2639	-3.0
307	06:30	1.2708	-2.6
307	06:40	1.2778	-2.2
307	06:50	1.2847	-1.7
307	07:00	1.2917	-1.2
307	07:10	1.2986	-0.7
307	07:20	1.3056	-0.2
307	07:30	1.3125	0.3
307	07:40	1.3194	0.8
307	07:50	1.3264	1.3
307	08:00	1.3333	1.8
307	08:10	1.3403	2.3
307	08:20	1.3472	2.7
307	08:30	1.3542	3.2
307	08:40	1.3611	3.7
307	08:50	1.3681	4.2
307	09:00	1.3750	4.7
307	09:10	1.3819	5.1
307	09:20	1.3889	5.5
307	09:30	1.3958	5.8
307	09:40	1.4028	6.1
307	09:50	1.4097	6.4
307	10:00	1.4167	6.5
307	10:10	1.4236	6.7
307	10:20	1.4306	6.7
307	10:30	1.4375	6.8
307	10:40	1.4444	6.8
307	10:50	1.4514	6.7
307	11:00	1.4583	6.7
307	11:10	1.4653	6.5
307	11:20	1.4722	6.4
307	11:30	1.4792	6.2
307	11:40	1.4861	5.9
307	11:50	1.4931	5.7

(Continued)

Table 5. (Continued)

Julian Date	Time		Water-Level Elevation, ft
	hr	days	
307	12:00	1.5000	5.5
307	12:10	1.5069	5.1
307	12:20	1.5139	4.8
307	12:30	1.5208	4.5
307	12:40	1.5278	4.1
307	12:50	1.5347	3.6
307	13:00	1.5417	3.2
307	13:10	1.5486	2.7
307	13:20	1.5556	2.2
307	13:30	1.5625	1.7
307	13:40	1.5694	1.2
307	13:50	1.5764	0.8
307	14:00	1.5833	0.2
307	14:10	1.5902	-0.2
307	14:20	1.5972	-0.8
307	14:30	1.6042	-1.3
307	14:40	1.6111	-1.9
307	14:50	1.6181	-2.4
307	15:00	1.6250	-2.9
307	15:10	1.6319	-3.4
307	15:20	1.6389	-3.9
307	15:30	1.6458	-4.3
307	15:40	1.6528	-4.7
307	15:50	1.6597	-5.2
307	16:00	1.6667	-5.6
307	16:10	1.6736	-6.0
307	16:20	1.6806	-6.3
307	16:30	1.6875	-6.5
307	16:40	1.6944	-6.6
307	16:50	1.7014	-6.9
307	17:00	1.7083	-6.8
307	17:10	1.7153	-6.8
307	17:20	1.7222	-6.8
307	17:30	1.7292	-6.6
307	17:40	1.7361	-6.4
307	17:50	1.7431	-6.2
307	18:00	1.7500	-5.8
307	18:10	1.7569	-5.5
307	18:20	1.7639	-5.4
307	18:30	1.7708	-5.0
307	18:40	1.7778	-4.6
307	18:50	1.7847	-4.3
307	19:00	1.7917	-3.9
307	19:10	1.7986	-3.5
307	19:20	1.8056	-3.1
307	19:30	1.8125	-2.7
307	19:40	1.8194	-2.2
307	19:50	1.8264	-1.8

(Continued)

Table 5. (Continued)

Julian Date	Time		Water-Level Elevation, ft
	hr	days	
307	20:00	1.8333	-1.4
307	20:10	1.8403	-0.9
307	20:20	1.8472	-0.3
307	20:30	1.8542	0.2
307	20:40	1.8611	0.6
307	20:50	1.8681	1.2
307	21:00	1.8750	1.7
307	21:10	1.8819	2.2
307	21:20	1.8889	2.6
307	21:30	1.8958	3.1
307	21:40	1.9028	3.6
307	21:50	1.9097	4.0
307	22:00	1.9167	4.3
307	22:10	1.9236	4.6
307	22:20	1.9306	4.9
307	22:30	1.9375	5.1
307	22:40	1.9444	5.3
307	22:50	1.9514	5.5
307	23:00	1.9583	5.7
307	23:10	1.9653	5.7
307	23:20	1.9722	5.6
307	23:30	1.9792	5.5
307	23:40	1.9861	5.5
307	23:50	1.9931	5.3
308	00:00	2.0000	5.2
308	00:10	2.0069	5.1
308	00:20	2.0139	4.8
308	00:30	2.0208	4.6
308	00:40	2.0278	4.3
308	00:50	2.0347	4.0
308	01:00	2.0417	3.7
308	01:10	2.0486	3.3
308	01:20	2.0556	2.9
308	01:30	2.0625	2.6
308	01:40	2.0694	2.2
308	01:50	2.0764	1.8
308	02:00	2.0833	1.4
308	02:10	2.0903	1.0
308	02:20	2.0972	0.4
308	02:30	2.1042	-0.0
308	02:40	2.1111	-0.4
308	02:50	2.1181	-0.8
308	03:00	2.1250	-1.3
308	03:10	2.1319	-1.8
308	03:20	2.1389	-2.2
308	03:30	2.1458	-2.8
308	03:40	2.1528	-3.2
308	03:50	2.1597	-3.6

(Continued)

Table 5. (Continued)

Julian Date	Time		Water-Level Elevation, ft
	hr	days	
308	04:00	2.1667	-4.0
308	04:10	2.1736	-4.3
308	04:20	2.1806	-4.6
308	04:30	2.1875	-4.9
308	04:40	2.1944	-5.2
308	04:50	2.2014	-5.3
308	05:00	2.2083	-5.5
308	05:10	2.2153	-5.5
308	05:20	2.2222	-5.5
308	05:30	2.2292	-5.3
308	05:40	2.2361	-5.2
308	05:50	2.2431	-5.1
308	06:00	2.2500	-4.9
308	06:10	2.2569	-4.7
308	06:20	2.2639	-4.3
308	06:30	2.2708	-4.0
308	06:40	2.2778	-3.5
308	06:50	2.2847	-3.2
308	07:00	2.2917	-2.9
308	07:10	2.2986	-2.5
308	07:20	2.3056	-2.1
308	07:30	2.3125	-1.7
308	07:40	2.3194	-1.2
308	07:50	2.3264	-0.7
308	08:00	2.3333	-0.2
308	08:10	2.3403	0.3
308	08:20	2.3472	0.8
308	08:30	2.3542	1.2
308	08:40	2.3611	1.7
308	08:50	2.3681	2.1
308	09:00	2.3750	2.6
308	09:10	2.3819	3.1
308	09:20	2.3889	3.6
308	09:30	2.3958	4.1
308	09:40	2.4028	4.6
308	09:50	2.4097	5.1
308	10:00	2.4167	5.4
308	10:10	2.4236	5.8
308	10:20	2.4306	6.2
308	10:30	2.4375	6.4
308	10:40	2.4444	6.5
308	10:50	2.4514	6.7
308	11:00	2.4583	6.8
308	11:10	2.4653	6.9
308	11:20	2.4722	7.1
308	11:30	2.4792	7.1
308	11:40	2.4861	7.0
308	11:50	2.4931	6.9

(Continued)

Table 5. (Continued)

Julian Date	Time		Water-Level Elevation, ft
	hr	days	
308	12:00	2.5000	6.7
308	12:10	2.5069	6.5
308	12:20	2.5139	6.4
308	12:30	2.5208	6.2
308	12:40	2.5278	5.9
308	12:50	2.5347	5.5
308	13:00	2.5417	5.1
308	13:10	2.5486	4.7
308	13:20	2.5556	4.3
308	13:30	2.5625	4.0
308	13:40	2.5694	3.6
308	13:50	2.5764	3.0
308	14:00	2.5833	2.5
308	14:10	2.5903	2.1
308	14:20	2.5972	1.6
308	14:30	2.6042	1.1
308	14:40	2.6111	0.6
308	14:50	2.6181	0.1
308	15:00	2.6250	-0.4
308	15:10	2.6319	-0.9
308	15:20	2.6389	-1.5
308	15:30	2.6458	-2.0
308	15:40	2.6528	-2.5
308	15:50	2.6597	-3.1
308	16:00	2.6667	-3.6
308	16:10	2.6736	-4.2
308	16:20	2.6806	-4.7
308	16:30	2.6875	-5.1
308	16:40	2.6944	-5.5
308	16:50	2.7014	-5.8
308	17:00	2.7083	-6.2
308	17:10	2.7153	-6.5
308	17:20	2.7222	-6.8
308	17:30	2.7292	-7.0
308	17:40	2.7361	-7.0
308	17:50	2.7431	-7.1
308	18:00	2.7500	-7.1
308	18:10	2.7569	-7.1
308	18:20	2.7639	-7.1
308	18:30	2.7708	-7.0
308	18:40	2.7778	-6.8
308	18:50	2.7847	-6.6
308	19:00	2.7917	-6.2
308	19:10	2.7986	-5.8
308	19:20	2.8056	-5.5
308	19:30	2.8125	-5.2
308	19:40	2.8194	-4.7
308	19:50	2.8264	-4.3

(Continued)

Table 5. (Continued)

Julian Date	Time		Water-Level Elevation, ft
	hr	days	
308	20:00	2.8333	-3.9
308	20:10	2.8403	-3.5
308	20:20	2.8472	-3.2
308	20:30	2.8542	-2.8
308	20:40	2.8611	-2.3
308	20:50	2.8681	-1.9
308	21:00	2.8750	-1.4
308	21:10	2.8819	-0.9
308	21:20	2.8889	-0.4
308	21:30	2.8958	0.1
308	21:40	2.9028	0.6
308	21:50	2.9097	1.1
308	22:00	2.9167	1.6
308	22:10	2.9236	2.1
308	22:20	2.9306	2.5
308	22:30	2.9375	3.0
308	22:40	2.9444	3.4
308	22:50	2.9514	3.7
308	23:00	2.9583	4.0
308	23:10	2.9653	4.4
308	23:20	2.9722	4.6
308	23:30	2.9792	4.6
308	23:40	2.9861	4.8
308	23:50	2.9931	5.0
309	00:00	3.0000	5.1
309	00:10	3.0069	5.2
309	00:20	3.0139	5.1
309	00:30	3.0208	5.0
309	00:40	3.0278	4.9
309	00:50	3.0347	4.8
309	01:00	3.0417	4.8
309	01:10	3.0486	4.6
309	01:20	3.0556	4.3
309	01:30	3.0625	3.9
309	01:40	3.0694	3.6
309	01:50	3.0764	3.3
309	02:00	3.0833	3.0
309	02:10	3.0903	2.7
309	02:20	3.0972	2.3
309	02:30	3.1042	1.9
309	02:40	3.1111	1.5
309	02:50	3.1181	1.2
309	03:00	3.1250	0.8
309	03:10	3.1319	0.5
309	03:20	3.1389	0.1
309	03:30	3.1458	-0.5
309	03:40	3.1528	-1.1
309	03:50	3.1597	-1.6

(Continued)

Table 5. (Continued)

Julian Date	Time		Water-Level Elevation, ft
	hr	days	
309	04:00	3.1667	-2.1
309	04:10	3.1736	-2.5
309	04:20	3.1806	-2.9
309	04:30	3.1875	-3.3
309	04:40	3.1944	-3.7
309	04:50	3.2014	-4.2
309	05:00	3.2083	-4.5
309	05:10	3.2153	-4.8
309	05:20	3.2222	-5.0
309	05:30	3.2292	-5.3
309	05:40	3.2361	-5.6
309	05:50	3.2431	-5.8
309	06:00	3.2500	-6.1
309	06:10	3.2569	-6.1
309	06:20	3.2639	-6.0
309	06:30	3.2708	-5.8
309	06:40	3.2778	-5.6
309	06:50	3.2847	-5.3
309	07:00	3.2917	-5.1
309	07:10	3.2986	-4.7
309	07:20	3.3056	-4.3
309	07:30	3.3125	-3.9
309	07:40	3.3194	-3.6
309	07:50	3.3264	-3.2
309	08:00	3.3333	-2.9
309	08:10	3.3403	-2.5
309	08:20	3.3472	-2.1
309	08:30	3.3542	-1.7
309	08:40	3.3611	-1.3
309	08:50	3.3681	-0.7
309	09:00	3.3750	-0.2
309	09:10	3.3819	0.3
309	09:20	3.3889	0.9
309	09:30	3.3958	1.4
309	09:40	3.4028	1.9
309	09:50	3.4097	2.3
309	10:00	3.4167	2.7
309	10:10	3.4236	3.1
309	10:20	3.4306	3.7
309	10:30	3.4375	4.2
309	10:40	3.4444	4.7
309	10:50	3.4514	5.2
309	11:00	3.4583	5.6
309	11:10	3.4653	5.9
309	11:20	3.4722	6.2
309	11:30	3.4792	6.4
309	11:40	3.4861	6.7
309	11:50	3.4931	6.8

(Continued)

Table 5. (Continued)

Julian Date	Time		Water-Level Elevation, ft
	hr	days	
309	12:00	3.5000	7.0
309	12:10	3.5069	7.1
309	12:20	3.5139	7.0
309	12:30	3.5208	7.0
309	12:40	3.5278	7.0
309	12:50	3.5347	6.9
309	13:00	3.5417	6.7
309	13:10	3.5486	6.6
309	13:20	3.5556	6.3
309	13:30	3.5625	6.0
309	13:40	3.5694	5.8
309	13:50	3.5764	5.6
309	14:00	3.5833	5.2
309	14:10	3.5903	4.9
309	14:20	3.5972	4.6
309	14:30	3.6042	4.2
309	14:40	3.6111	3.8
309	14:50	3.6181	3.4
309	15:00	3.6250	2.8
309	15:10	3.6319	2.2
309	15:20	3.6389	1.7
309	15:30	3.6458	1.2
309	15:40	3.6528	0.8
309	15:50	3.6597	0.3
309	16:00	3.6667	-0.1
309	16:10	3.6736	-0.7
309	16:20	3.6806	-1.3
309	16:30	3.6875	-1.8
309	16:40	3.6944	-2.2
309	16:50	3.7014	-2.6
309	17:00	3.7083	-3.1
309	17:10	3.7153	-3.6
309	17:20	3.7222	-4.0
309	17:30	3.7292	-4.6
309	17:40	3.7361	-4.9
309	17:50	3.7431	-5.2
309	18:00	3.7500	-5.5
309	18:10	3.7569	-5.7
309	18:20	3.7639	-6.0
309	18:30	3.7708	-6.1
309	18:40	3.7778	-6.2
309	18:50	3.7847	-6.2
309	19:00	3.7917	-6.2
309	19:10	3.7986	-6.1
309	19:20	3.8056	-6.0
309	19:30	3.8125	-5.8
309	19:40	3.8194	-5.6
309	19:50	3.8264	-5.4

(Continued)

Table 5. (Continued)

Julian Date	Time		Water-Level Elevation, ft
	hr	days	
309	20:00	3.8333	-5.0
309	20:10	3.8403	-4.7
309	20:20	3.8472	-4.4
309	20:30	3.8542	-4.0
309	20:40	3.8611	-3.7
309	20:50	3.8681	-3.4
309	21:00	3.8750	-3.1
309	21:10	3.8819	-2.8
309	21:20	3.8889	-2.4
309	21:30	3.8958	-2.0
309	21:40	3.9028	-1.5
309	21:50	3.9097	-1.0
309	22:00	3.9167	-0.5
309	22:10	3.9236	-0.0
309	22:20	3.9306	0.5
309	22:30	3.9375	0.9
309	22:40	3.9444	1.4
309	22:50	3.9514	1.9
309	23:00	3.9582	2.3
309	23:10	3.9653	2.7
309	23:20	3.9722	3.3
309	23:30	3.9792	3.7
309	23:40	3.9861	4.0
309	23:50	3.9931	4.4
310	00:00	4.0000	4.8
310	00:10	4.0069	4.9
310	00:20	4.0139	5.0
310	00:30	4.0208	5.3
310	00:40	4.0278	5.5
310	00:50	4.0347	5.6
310	01:00	4.0417	5.6
310	01:10	4.0486	5.6
310	01:20	4.0556	5.5
310	01:30	4.0625	5.5
310	01:40	4.0694	5.3
310	01:50	4.0764	5.1
310	02:00	4.0833	4.9
310	02:10	4.0903	4.7
310	02:20	4.0972	4.4
310	02:30	4.1042	4.3
310	02:40	4.1111	4.0
310	02:50	4.1181	3.7
310	03:00	4.1250	3.3
310	03:10	4.1319	2.8
310	03:20	4.1389	2.5
310	03:30	4.1458	2.2
310	03:40	4.1528	1.9
310	03:50	4.1597	1.5

(Continued)

Table 5. (Continued)

Julian Date	Time		Water-Level Elevation, ft
	hr	days	
310	04:00	4.1667	1.2
310	04:10	4.1736	0.7
310	04:20	4.1806	0.3
310	04:30	4.1875	-0.1
310	04:40	4.1944	-0.5
310	04:50	4.2014	-1.0
310	05:00	4.2083	-1.4
310	05:10	4.2153	-1.8
310	05:20	4.2222	-2.1
310	05:30	4.2292	-2.5
310	05:40	4.2361	-2.9
310	05:50	4.2431	-3.1
310	06:00	4.2500	-3.4
310	06:10	4.2569	-3.7
310	06:20	4.2639	-4.0
310	06:30	4.2708	-4.1
310	06:40	4.2778	-4.3
310	06:50	4.2847	-4.5
310	07:00	4.2917	-4.6
310	07:10	4.2986	-4.6
310	07:20	4.3056	-4.8
310	07:30	4.3125	-4.7
310	07:40	4.3194	-4.3
310	07:50	4.3264	-3.9
310	08:00	4.3333	-3.7
310	08:10	4.3403	-3.5
310	08:20	4.3472	-3.1
310	08:30	4.3542	-2.8
310	08:40	4.3611	-2.6
310	08:50	4.3681	-2.2
310	09:00	4.3750	-1.7
310	09:10	4.3819	-1.3
310	09:20	4.3889	-0.9
310	09:30	4.3958	-0.5
310	09:40	4.4028	-0.0
310	09:50	4.4097	0.5
310	10:00	4.4167	0.6
310	10:10	4.4236	0.8
310	10:20	4.4306	1.3
310	10:30	4.4375	1.7
310	10:40	4.4444	2.0
310	10:50	4.4514	2.8
310	11:00	4.4583	3.5
310	11:10	4.4653	3.8
310	11:20	4.4722	4.0
310	11:30	4.4792	4.4
310	11:40	4.4861	4.8
310	11:50	4.4931	5.0

(Continued)

Table 5. (Continued)

Julian Date	Time		Water-Level Elevation, ft
	hr	days	
310	12:00	4.5000	5.6
310	12:10	4.5069	6.1
310	12:20	4.5139	6.1
310	12:30	4.5208	6.1
310	12:40	4.5278	6.3
310	12:50	4.5347	6.2
310	13:00	4.5417	6.2
310	13:10	4.5486	6.5
310	13:20	4.5556	6.6
310	13:30	4.5625	6.5
310	13:40	4.5694	6.6
310	13:50	4.5764	6.5
310	14:00	4.5833	6.1
310	14:10	4.5903	5.9
310	14:20	4.5972	6.0
310	14:30	4.6042	5.8
310	14:40	4.6111	5.2
310	14:50	4.6181	4.8
310	15:00	4.6250	4.3
310	15:10	4.6319	3.8
310	15:20	4.6389	3.4
310	15:30	4.6458	3.1
310	15:40	4.6528	2.6
310	15:50	4.6597	2.2
310	16:00	4.6667	1.8
310	16:10	4.6736	1.4
310	16:20	4.6806	1.0
310	16:30	4.6875	0.4
310	16:40	4.6944	-0.2
310	16:50	4.7014	-0.6
310	17:00	4.7083	-1.0
310	17:10	4.7153	-1.4
310	17:20	4.7222	-1.9
310	17:30	4.7292	-2.3
310	17:40	4.7361	-2.9
310	17:50	4.7431	-3.5
310	18:00	4.7500	-4.0
310	18:10	4.7569	-4.5
310	18:20	4.7639	-4.6
310	18:30	4.7708	-5.2
310	18:40	4.7778	-5.5
310	18:50	4.7847	-5.8
310	19:00	4.7917	-6.2
310	19:10	4.7986	-6.4
310	19:20	4.8056	-6.6
310	19:30	4.8125	-6.8
310	19:40	4.8194	-6.9
310	19:50	4.8264	-6.8

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Table 5. (Continued)

Julian Date	Time		Water-Level Elevation, ft
	hr	days	
310	20:00	4.8333	-6.7
310	20:10	4.8403	-6.7
310	20:20	4.8472	-6.7
310	20:30	4.8542	-6.6
310	20:40	4.8611	-6.4
310	20:50	4.8681	-6.1
310	21:00	4.8750	-5.7
310	21:10	4.8819	-5.4
310	21:20	4.8889	-4.9
310	21:30	4.8958	-4.6
310	21:40	4.9028	-4.3
310	21:50	4.9097	-3.9
310	22:00	4.9167	-3.4
310	22:10	4.9236	-3.0
310	22:20	4.9306	-2.7
310	22:30	4.9375	-2.3
310	22:40	4.9444	-2.1
310	22:50	4.9514	-1.8
310	23:00	4.9583	-1.4
310	23:10	4.9653	-1.0
310	23:20	4.9722	-0.5
310	23:30	4.9792	0.1
310	23:40	4.9861	0.6
310	23:50	4.9931	1.1
311	00:00	5.0000	1.5
311	00:10	5.0069	1.8
311	00:20	5.0139	2.1
311	00:30	5.0208	2.5
311	00:40	5.0278	2.9
311	00:50	5.0347	3.3
311	01:00	5.0417	3.5
311	01:10	5.0486	3.7
311	01:20	5.0556	3.8
311	01:30	5.0625	4.0
311	01:40	5.0694	4.3
311	01:50	5.0764	4.4
311	02:00	5.0833	4.4
311	02:10	5.0903	4.4
311	02:20	5.0972	4.3
311	02:30	5.1042	4.3
311	02:40	5.1111	4.3
311	02:50	5.1181	4.3
311	03:00	5.1250	4.2
311	03:10	5.1319	4.0
311	03:20	5.1389	3.6
311	03:30	5.1458	3.2
311	03:40	5.1528	3.1
311	03:50	5.1597	2.8

(Continued)

Table 5. (Concluded)

Julian Date	Time		Water-Level Elevation, ft
	hr	days	
311	04:00	5.1667	2.5
311	04:10	5.1736	2.1
311	04:20	5.1806	1.7
311	04:30	5.1875	1.4
311	04:40	5.1944	1.1
311	04:50	5.2014	0.8
311	05:00	5.2083	0.4
311	05:10	5.2153	-0.0
311	05:20	5.2222	-0.5
311	05:30	5.2292	-0.9
311	05:40	5.2361	-1.3
311	05:50	5.2431	-1.7
311	06:00	5.2500	-2.1
311	06:10	5.2569	-2.6
311	06:20	5.2639	-3.1
311	06:30	5.2708	-3.5
311	06:40	5.2778	-3.9
311	06:50	5.2847	-4.3
311	07:00	5.2917	-4.5

Table 6
Current Data Observed at Station R1.0A
5 November 1990

<u>Hour</u> <u>EST</u>	<u>Depth</u> <u>ft</u>	<u>Speed</u> <u>fps</u>	<u>Direction</u> <u>deg*</u>
<u>Surface**</u>			
618	3.0	0.9	300
716	3.0	1.9	90
805	3.0	2.5	90
918	3.0	4.0	88
1004	3.0	3.7	90
1117	3.0	2.8	85
1205	3.0	1.5	80
1319	3.0	1.0	315
1404	3.0	1.2	275
1515	3.0	2.6	240
1604	3.0	2.9	220
1721	3.0	2.4	230
1804	3.0	2.1	210
1922	3.0	0.6	30
<u>One-Quarter Depth</u>			
617	8.5	0.6	268
715	9.3	1.9	92
804	9.2	2.5	90
917	10.7	3.8	90
1003	11.0	3.6	92
1116	11.9	2.6	94
1204	16.8	1.3	88
1318	11.6	0.7	270
1403	12.0	0.9	280
1514	11.2	2.2	250
1603	11.0	2.5	240
1720	9.2	2.5	230
1803	8.4	1.6	235
1921	8.2	0.5	55
<u>Middepth</u>			
616	17.0	0.7	248
714	18.7	2.0	90
803	18.5	2.4	90
916	21.5	3.4	82
1002	22.0	3.2	90
1115	23.8	2.4	90
1203	23.5	1.4	90
1317	23.2	0.9	265
1402	24.0	1.0	260
1513	22.5	2.1	250

(Continued)

- * Directions are in degrees from true north from which the current was flowing.
- ** Surface measurements were obtained 3.0 ft below top of water surface.

Table 5. (Concluded)

<u>Hour</u> <u>EST</u>	<u>Depth</u> <u>ft</u>	<u>Speed</u> <u>fps</u>	<u>Direction</u> <u>deg</u>
<u>Middepth: (Continued)</u>			
1602	22.0	2.8	260
1719	18.5	2.4	245
1802	16.8	1.5	250
1920	16.5	1.0	45
<u>Three-Quarter Depth</u>			
615	25.5	0.6	228
713	28.0	1.6	95
802	27.7	2.0	90
915	32.2	3.0	90
1001	33.0	2.7	88
1114	35.7	1.8	90
1202	40.3	1.5	115
1316	34.8	1.4	240
1401	36.0	1.8	250
1512	33.7	2.2	260
1601	33.0	2.2	270
1718	27.7	2.0	250
1801	25.2	1.5	260
1919	24.8	1.3	50
<u>Bottom+</u>			
613	32.0	0.9	125
712	35.5	1.0	125
801	35.0	1.8	94
914	41.0	1.8	92
1000	42.0	1.9	85
1113	45.5	1.4	90
1202	45.0	0.9	86
1315	44.5	1.0	240
1400	45.7	1.4	240
1511	43.0	1.8	260
1600	44.0	1.8	280
1717	35.0	1.3	250
1800	31.6	1.1	265
1918	33.0	0.7	160

+ Bottom measurements were obtained 2.0 ft above actual bottom.

Table 7
Current Data Observed at Station R1.0B
5 November 1990

<u>Hour</u> <u>EST</u>	<u>Depth</u> <u>ft</u>	<u>Speed</u> <u>fps</u>	<u>Direction</u> <u>deg*</u>
<u>Surface**</u>			
600	3.0	1.0	265
704	3.0	1.8	100
816	3.0	2.6	92
907	3.0	3.1	86
1015	3.0	2.3	85
1104	3.0	2.0	90
1216	3.0	1.8	345
1304	3.0	1.9	350
1417	3.0	2.5	320
1504	3.0	3.1	320
1627	3.0	3.5	280
1704	3.0	3.5	300
1818	3.0	1.4	220
1904	3.0	1.3	120
<u>One-Quarter Depth</u>			
606	14.7	0.7	274
703	14.9	2.0	90
815	15.6	2.6	94
906	16.2	2.9	88
1014	16.8	2.3	85
1103	17.2	1.9	80
1215	17.5	0.9	320
1303	18.0	1.9	310
1416	17.5	2.2	280
1503	16.5	3.0	285
1626	16.2	3.3	270
1703	15.0	3.5	255
1817	14.0	1.5	250
1903	14.1	1.2	170
<u>Middepth</u>			
604	29.5	0.6	295
702	29.8	2.0	94
814	31.2	2.7	82
905	32.5	2.9	80
1013	33.5	2.5	85
1102	34.5	2.0	65
1214	35.0	0.9	330
1302	35.0	1.4	290

(Continued)

* Directions are in degrees from true north from which the current was flowing.

** Surface measurements were obtained 3.0 ft below top of water surface.

Table 7. (Concluded)

<u>Hour</u> <u>EST</u>	<u>Depth</u> <u>ft</u>	<u>Speed</u> <u>fps</u>	<u>Direction</u> <u>deg</u>
<u>Middepth (Continued)</u>			
1415	35.0	2.0	270
1502	33.0	2.8	280
1625	32.5	3.4	260
1702	30.0	3.1	260
1816	28.1	1.5	275
1902	28.2	1.7	180
<u>Three-Quarter Depth</u>			
603	45.2	0.5	314
701	44.7	1.8	94
813	46.8	2.3	75
904	48.7	2.7	82
1012	50.3	2.5	88
1101	51.7	1.7	60
1213	52.5	0.8	355
1301	54.0	1.5	250
1414	43.5	2.1	265
1501	49.5	2.8	260
1624	48.7	3.5	270
1701	45.0	3.7	260
1815	42.2	1.2	280
1901	42.3	2.9	30
<u>Bottom+</u>			
602	57.0	0.3	309
700	57.5	1.4	100
812	60.5	1.9	70
903	63.0	2.6	70
1011	65.0	1.9	90
1100	67.0	1.5	68
1212	68.0	1.0	347
1300	68.0	0.9	240
1413	67.0	1.5	240
1500	64.8	2.5	250
1623	62.0	3.1	240
1700	60.0	3.1	260
1814	56.2	1.0	265
1900	56.4	2.9	20

* Bottom measurements were obtained 2.0 ft above actual bottom.

Table 8
Current Data Observed at Station R2.0A
5 November 1990

<u>Hour</u> <u>EST</u>	<u>Depth</u> <u>ft</u>	<u>Speed</u> <u>fps</u>	<u>Direction</u> <u>deg*</u>
<u>Surface**</u>			
602	3.0	0.3	120
702	3.0	0.5	116
802	3.0	0.7	4
902	3.0	0.7	68
1002	3.0	0.6	110
1102	3.0	0.7	90
1202	3.0	0.7	150
1302	3.0	0.8	250
1402	3.0	0.6	250
1502	3.0	0.7	260
1602	3.0	0.7	300
1702	3.0	0.6	186
1802	3.0	0.9	180
1902	3.0	0.4	134
<u>Middepth</u>			
601	4.2	0.3	136
701	4.5	0.5	130
801	5.5	0.6	4
901	7.0	0.8	78
1001	8.2	0.6	74
1101	10.0	0.6	98
1201	10.0	0.5	174
1301	10.2	0.7	272
1401	9.2	0.5	260
1501	8.2	0.9	240
1601	6.8	0.6	246
1701	5.0	0.7	186
1801	4.2	0.8	182
1901	4.0	0.5	144
<u>Bottom†</u>			
600	6.4	0.4	134
700	7.0	0.6	144
800	9.0	0.8	340
900	12.0	0.5	80
1000	15.0	0.5	54
1100	18.0	0.3	166
1200	18.0	0.5	140
1300	18.5	0.4	250

(Continued)

- * Directions are in degrees from true north from which the current was flowing.
- ** Surface measurements were obtained 3.0 ft below top of water surface.
- † Bottom measurements were obtained 2.0 ft above actual bottom.

Table 8. (Concluded)

<u>Hour</u> <u>EST</u>	<u>Depth</u> <u>ft</u>	<u>Speed</u> <u>fps</u>	<u>Direction</u> <u>deg</u>
<u>Bottom+ (Continued)</u>			
1400	16.5	0.5	254
1500	14.5	1.1	254
1600	11.5	0.5	242
1700	9.0	0.6	210
1800	6.5	0.6	184
1900	6.0	0.5	134

Table 9
Current Data Observed at Station R2.0B
5 November 1990

<u>Hour</u> <u>EST</u>	<u>Depth</u> <u>ft</u>	<u>Speed</u> <u>fps</u>	<u>Direction</u> <u>deg*</u>
<u>Surface**</u>			
609	3.0	0.6	166
708	3.0	0.5	120
809	3.0	0.7	50
907	3.0	0.8	72
1008	3.0	0.6	60
1109	3.0	0.7	94
1208	3.0	1.0	44
1312	3.0	0.7	314
1408	3.0	0.6	250
1508	3.0	0.6	266
1609	3.0	0.5	242
1707	3.0	1.0	204
1812	3.0	1.2	180
1910	3.0	0.8	170
<u>Middepth</u>			
608	5.5	0.6	170
707	6.5	0.5	144
808	8.0	0.8	40
906	9.0	0.8	72
1007	10.5	0.7	44
1108	11.5	0.7	46
1207	12.0	0.8	270
1311	12.2	0.7	306
1407	11.0	0.9	254
1507	9.8	0.9	260
1608	8.2	0.8	248
1706	7.0	1.0	212
1811	6.0	1.0	178
1909	6.0	0.7	162
<u>Bottom†</u>			
607	9.0	0.4	182
706	11.0	0.8	158
807	14.0	0.6	10
905	16.0	0.4	86
1006	19.0	0.8	4
1107	21.0	0.7	38
1206	22.0	0.7	216
1310	22.5	0.6	288
1406	20.0	0.7	288

(Continued)

- * Directions are in degrees from true north from which the current was flowing.
- ** Surface measurements were obtained 2.0 ft below top of water surface.
- † Bottom measurements were obtained 1.0 ft above actual bottom.

Table 9. (Concluded)

<u>Hour</u> <u>EST</u>	<u>Depth</u> <u>ft</u>	<u>Speed</u> <u>fps</u>	<u>Direction</u> <u>deg</u>
<u>Bottom+ (Continued)</u>			
1506	17.5	0.6	180
1607	14.5	0.6	260
1705	12.0	0.7	240
1810	10.0	0.8	234
1908	10.0	0.7	192

Table 10
Current Data Observed at Station R2.0C
5 November 1990

<u>Hour</u> <u>EST</u>	<u>Depth</u> <u>ft</u>	<u>Speed</u> <u>fps</u>	<u>Direction</u> <u>deg*</u>
<u>Surface**</u>			
614	3.0	0.6	170
715	3.0	0.9	88
815	3.0	1.6	56
912	3.0	1.0	68
1012	3.0	0.7	118
1114	3.0	0.7	134
1215	3.0	0.6	150
1318	3.0	0.7	220
1415	3.0	0.8	272
1513	3.0	0.5	240
1614	3.0	0.5	244
1712	3.0	1.6	226
1822	3.0	1.6	204
1917	3.0	0.5	138
<u>Middepth</u>			
613	7.2	0.6	182
714	7.7	0.7	82
814	8.2	1.1	62
911	10.0	0.9	80
1011	11.5	0.9	68
1113	13.0	0.7	70
1214	13.7	0.6	220
1317	13.2	0.8	262
1413	12.2	0.8	250
1512	11.0	0.6	250
1613	9.5	1.0	236
1711	8.0	1.5	222
1821	7.0	1.6	216
1916	7.8	0.3	184
<u>Bottom†</u>			
612	12.5	0.6	186
713	13.5	0.4	74
813	15.5	0.7	66
910	18.0	0.8	56
1010	21.0	1.0	32
1112	24.0	0.7	66
1213	25.5	0.7	248
1316	24.5	0.5	251
1412	22.5	0.5	260

(Continued)

* Directions are in degrees from true north from which the current was flowing.

** Surface measurements were obtained 3.0 ft below top of water surface.

† Bottom measurements were obtained 2.0 ft above actual bottom.

Table 10. (Concluded)

<u>Hour</u> <u>EST</u>	<u>Depth</u> <u>ft</u>	<u>Speed</u> <u>fps</u>	<u>Direction</u> <u>deg</u>
<u>Bottom+ (Continued)</u>			
1511	20.0	0.6	280
1612	17.0	0.8	270
1710	14.0	1.1	218
1820	12.0	1.3	266
1915	13.5	0.6	202

Table 11
Current Data Observed at Station R3.0A
5 November 1990

<u>Hour</u> <u>EST</u>	<u>Depth</u> <u>ft</u>	<u>Speed</u> <u>fps</u>	<u>Direction</u> <u>deg*</u>
<u>Surface**</u>			
614	3.0	1.2	140
707	3.0	0.4	195
809	3.0	0.3	149
908	3.0	0.4	138
1006	3.0	0.3	110
1230	3.0	0.6	295
1333	3.0	0.7	295
1424	3.0	0.9	240
1524	3.0	0.6	165
1617	3.0	0.3	290
1718	3.0	0.4	275
1820	3.0	0.7	40
1910	3.0	0.4	95
<u>One-Quarter Depth</u>			
612	9.6	0.5	125
706	9.7	0.2	230
807	9.4	0.3	210
906	10.8	0.4	255
1005	9.8	0.4	60
1229	12.5	0.6	305
1332	12.3	0.6	270
1423	11.0	0.6	260
1523	11.1	0.7	255
1615	10.5	0.6	290
1717	9.8	0.4	285
1819	9.4	0.5	285
1909	8.8	0.3	68
<u>Middepth</u>			
610	19.3	0.3	120
705	19.3	0.3	130
805	18.7	0.3	130
905	21.5	0.3	250
1004	19.6	0.2	49
1229	25.0	0.7	299
1330	24.6	0.5	200
1422	22.0	0.6	242
1521	22.2	0.6	230
1614	21.0	0.3	280
1716	19.5	0.3	285
1817	18.8	0.3	35

(Continued)

* Directions are in degrees from true north from which the current was flowing.

** Surface measurements were obtained 3.0 ft below top of water surface.

Table 11. (Concluded)

Hour EST	Depth ft	Speed fps	Direction deg
<u>Middepth (Continued)</u>			
1908	17.5	0.3	65
<u>Three-Quarter Depth</u>			
609	28.9	0.3	130
704	29.0	0.4	100
803	28.1	0.4	111
903	32.3	0.8	89
1003	29.4	0.5	113
1228	37.5	0.6	300
1329	36.9	1.0	38
1420	33.0	0.6	140
1519	33.3	0.5	25
1612	31.5	0.4	200
1715	29.3	0.5	225
1816	28.2	0.3	25
1907	26.3	0.4	105
<u>Bottom+</u>			
700	36.7	0.3	86
608	36.5	0.4	125
802	35.5	0.3	70
901	41.0	0.4	75
1002	37.2	0.5	310
1227	48.1	1.0	290
1328	47.1	0.6	15
1419	44.0	0.6	152
1517	42.4	0.3	265
1611	39.0	0.3	240
1714	36.0	0.4	245
1815	34.5	0.4	350
1906	32.0	0.3	80

+ Bottom measurements were obtained 2.0 ft above actual bottom.

Table 12
Current Data Observed at Station R3.0B
5 November 1990

<u>Hour</u> <u>EST</u>	<u>Depth</u> <u>ft</u>	<u>Speed</u> <u>fps</u>	<u>Direction</u> <u>deg*</u>
<u>Surface**</u>			
628	3.0	0.1	176
720	3.0	0.9	110
818	3.0	0.3	132
918	3.0	0.5	150
1017	3.0	0.3	180
1240	3.0	0.7	312
1346	3.0	0.9	325
1441	3.0	0.9	291
1538	3.0	0.3	330
1630	3.0	1.4	330
1730	3.0	1.3	325
1832	3.0	0.8	325
1924	3.0	1.3	1
<u>One-Quarter Depth</u>			
627	8.8	0.2	178
719	10.0	1.2	130
817	11.3	0.7	140
917	11.6	0.6	148
1016	11.7	0.6	150
1239	12.8	0.6	302
1345	12.5	0.8	255
1440	10.9	0.8	305
1537	9.9	0.3	330
1627	16.6	1.2	320
1729	9.3	1.4	322
1831	9.0	0.9	295
1923	9.9	1.1	330
<u>Middepth</u>			
626	17.7	0.2	125
718	20.0	0.5	143
816	22.5	0.9	175
916	23.2	1.2	146
1014	23.4	1.1	148
1238	25.7	0.6	124
1343	25.0	0.8	220
1439	21.7	0.6	345
1536	19.8	0.4	325
1625	23.2	1.5	290
1727	18.6	1.5	320
1829	18.0	1.0	335

(Continued)

* Directions are in degrees from true north from which the current was flowing.

** Surface measurements were obtained 3.0 ft below top of water surface.

Table 12. (Concluded)

<u>Hour</u> <u>EST</u>	<u>Depth</u> <u>ft</u>	<u>Speed</u> <u>fps</u>	<u>Direction</u> <u>deg</u>
<u>Middepth (Continued)</u>			
1921	19.7	0.9	20
<u>Three-Quarter Depth</u>			
625	26.5	0.2	123
717	30.0	0.5	128
815	33.8	1.5	165
915	34.8	0.8	146
1013	35.1	1.0	162
1237	38.5	0.7	122
1342	37.5	0.7	135
1438	32.6	0.3	355
1535	28.7	0.3	325
1624	39.8	0.9	265
1725	27.9	1.4	294
1828	27.0	1.1	275
1919	29.6	1.0	75
<u>Bottom+</u>			
623	33.4	0.1	148
712	38.0	0.7	178
813	43.0	0.8	185
914	44.5	0.4	271
1011	46.8	0.5	171
1236	51.4	0.8	160
1341	48.0	0.9	150
1437	41.4	0.3	310
1533	37.7	0.4	315
1623	43.5	1.3	290
1724	34.5	1.8	290
1826	33.0	1.0	315
1916	36.3	1.2	30

+ Bottom measurements were obtained 2.0 ft above actual bottom

Table 13
Current Data Observed at Station R3.0C
5 November 1990

<u>Hour</u> <u>EST</u>	<u>Depth</u> <u>ft</u>	<u>Speed</u> <u>fps</u>	<u>Direction</u> <u>deg*</u>
<u>Surface**</u>			
639	3.0	0.3	168
735	3.0	0.3	113
827	3.0	0.3	160
927	3.0	0.9	164
1026	3.0	1.2	148
1302	3.0	0.8	15
1400	3.0	0.8	292
1455	3.0	0.7	350
1550	3.0	1.1	330
1641	3.0	1.1	330
1740	3.0	1.5	335
1842	3.0	0.7	355
1937	3.0	1.0	135
<u>One-Quarter Depth</u>			
638	9.6	0.3	200
734	10.7	0.6	155
826	11.0	0.8	162
926	9.2	1.0	160
1025	12.3	1.1	152
1300	12.9	0.4	350
1359	13.1	0.8	275
1454	12.5	0.9	310
1549	12.2	1.3	315
1639	11.0	1.4	325
1739	10.9	1.3	320
1841	10.8	0.7	320
1935	10.9	0.8	190
<u>Middepth</u>			
637	19.3	0.3	158
733	21.5	1.1	133
825	22.0	1.2	158
925	18.3	1.0	164
1024	24.7	1.0	148
1259	25.8	0.5	80
1357	26.2	0.8	215
1453	25.0	1.0	300
1548	24.5	1.1	300
1638	22.0	1.3	295
1737	21.8	1.3	310
1840	21.5	0.8	315

(Continued)

* Directions are in degrees from true north from which the current was flowing.

** Surface measurements were obtained 3.0 ft below top of water surface.

Table 13. (Concluded)

<u>Hour</u> <u>EST</u>	<u>Depth</u> <u>ft</u>	<u>Speed</u> <u>fps</u>	<u>Direction</u> <u>deg</u>
<u>Middepth (Continued)</u>			
1934	21.8	0.9	55
<u>Three-Quarter Depth</u>			
636	28.9	0.6	120
731	32.2	1.2	122
824	33.0	1.1	152
924	27.5	1.0	142
1023	37.0	0.8	142
1258	38.7	0.6	130
1355	39.3	0.3	75
1452	37.5	1.1	290
1546	36.7	0.8	280
1636	33.0	1.3	310
1736	32.7	1.1	282
1839	32.3	0.8	325
1933	32.7	0.6	25
<u>Bottom+</u>			
634	36.5	0.6	188
729	41.0	0.9	100
823	42.0	0.8	160
923	34.5	0.9	128
1022	47.3	0.4	258
1257	51.6	0.6	120
1351	50.5	0.8	215
1451	48.0	1.1	208
1544	46.0	1.1	260
1635	44.0	1.1	298
1734	40.0	1.4	295
1837	40.0	0.5	355
1932	40.5	0.5	5

+ Bottom measurements were obtained 2.0 ft above actual bottom.

Table 14
Current Data Observed at Station R3.0D
5 November 1990

<u>Hour</u> <u>EST</u>	<u>Depth</u> <u>ft</u>	<u>Speed</u> <u>fps</u>	<u>Direction</u> <u>deg*</u>
<u>Surface**</u>			
648	3.0	0.4	190
742	3.0	1.1	170
838	3.0	0.3	168
936	3.0	0.6	196
1322	3.0	0.9	350
1411	3.0	0.9	1
1510	3.0	1.0	322
1603	3.0	1.2	320
1652	3.0	1.2	328
1752	3.0	0.8	315
1850	3.0	0.5	359
1954	3.0	0.5	125
<u>One-Quarter (Depth)</u>			
647	7.4	0.3	150
741	7.5	0.5	225
837	8.1	0.6	180
935	8.4	0.7	195
1320	10.0	0.7	1
1410	10.3	0.8	340
1509	8.7	1.1	305
1602	9.0	1.4	310
1650	8.4	1.0	315
1751	7.4	0.7	305
1849	7.3	0.4	310
1953	7.3	0.5	125
<u>Middepth</u>			
646	14.9	0.4	194
740	15.1	0.6	145
836	16.3	0.9	146
934	16.7	0.7	170
1032	18.6	0.9	150
1320	20.1	0.9	39
1409	19.5	0.7	5
1507	17.5	1.0	330
1600	18.0	0.8	310
1649	16.8	1.0	320
1750	14.8	0.9	310
1848	14.5	0.4	295
1952	14.6	0.4	140

(Continued)

* Directions are in degrees from true north from which the current was flowing.

** Surface measurements were obtained 3.0 ft below top of water surface.

Table 14. (Concluded)

Hour EST	Depth ft	Speed fps	Direction deg
<u>Three-Quarter Depth</u>			
645	22.3	0.4	164
738	22.6	0.8	125
835	24.4	0.9	175
933	25.1	0.5	126
1030	27.9	0.8	126
1318	30.1	0.4	35
1407	28.8	0.3	15
1505	26.2	0.9	320
1559	27.0	0.8	312
1648	25.2	0.9	285
1748	22.2	0.8	305
1847	21.8	0.6	345
1951	21.9	0.4	128
<u>Bottom+</u>			
644	27.8	0.4	180
737	28.2	0.9	130
834	30.5	1.1	165
932	31.5	0.4	65
1029	35.3	0.8	158
1316	38.3	0.4	30
1405	37.1	0.5	285
1504	35.0	0.7	330
1558	33.0	0.6	300
1647	30.5	1.1	310
1746	26.5	0.7	295
1846	26.0	1.0	320
1950	26.1	0.3	120

+ Bottom measurements were obtained 2.0 ft above actual bottom.

Table 15
Current Data Observed at Station R4.0B
5 November 1990

<u>Hour</u> <u>EST</u>	<u>Depth</u> <u>ft</u>	<u>Speed</u> <u>fps</u>	<u>Direction</u> <u>deg*</u>
<u>Surface**</u>			
605	3.0	0.6	40
701	3.0	0.3	270
758	3.0	0.5	275
902	3.0	0.8	150
1006	3.0	0.3	150
1103	3.0	0.8	40
1202	3.0	1.1	10
1301	3.0	1.0	130
1404	3.0	1.1	340
1508	3.0	0.9	1
1603	3.0	1.3	10
1702	3.0	0.4	310
1819	3.0	0.8	300
1903	3.0	0.8	25
<u>One-Quarter Depth</u>			
605	9.8	1.0	45
701	10.1	0.2	300
757	10.7	0.5	190
901	11.0	0.9	140
1005	12.1	1.0	30
1103	12.7	1.0	130
1202	12.9	1.1	100
1300	12.9	0.5	180
1404	12.5	0.7	10
1507	11.8	1.0	1
1602	11.1	1.1	90
1702	10.6	1.7	355
1818	10.4	0.9	330
1903	10.1	0.8	190
<u>Middepth</u>			
604	19.6	0.0	330
701	20.2	0.3	210
756	20.2	0.7	170
901	22.1	1.0	130
1005	24.2	0.5	80
1102	25.4	0.9	130
1201	25.8	0.8	140
1300	25.8	0.5	135
1403	25.9	0.8	350
1507	23.6	0.5	35

(Continued)

* Directions are in degrees from true north from which the current was flowing.

** Surface measurements were obtained 3.0 ft below top of water surface.

Table 15. (Concluded)

Hour EST	Depth ft	Speed fps	Direction deg
<u>Middepth (Continued)</u>			
1602	22.2	0.7	260
1701	21.2	1.5	355
1818	20.8	1.3	310
1902	20.3	0.7	175
<u>Three-Quarter Depth</u>			
604	29.4	0.1	270
700	30.3	0.2	160
756	31.9	0.6	190
901	33.1	0.9	150
1004	36.3	0.5	135
1102	38.1	0.8	130
1201	38.7	0.7	140
1300	38.7	0.7	170
1402	37.5	0.7	350
1506	35.4	0.9	340
1601	33.3	1.2	325
1701	31.8	1.4	340
1817	31.2	1.2	330
1901	30.4	0.4	35
<u>Bottom+</u>			
600	37.2	0.1	210
700	38.5	0.4	160
755	40.5	0.5	240
900	42.2	0.6	170
1001	46.5	0.9	170
1100	48.4	0.7	140
1200	49.6	0.4	170
1259	49.6	0.6	185
1400	48.0	1.0	335
1506	45.2	1.1	330
1600	42.5	1.1	320
1700	40.4	1.1	330
1816	39.6	1.2	340
1900	38.6	0.6	165

+ Bottom measurements were obtained 2.0 ft above actual bottom.

Table 16
Current Data Observed at Station R5.0B
5 November 1990

<u>Hour</u> <u>EST</u>	<u>Depth</u> <u>ft</u>	<u>Speed</u> <u>fps</u>	<u>Direction</u> <u>deg*</u>
<u>Surface**</u>			
613	3.0	0.7	335
708	3.0	0.4	240
809	3.0	0.7	170
910	3.0	0.5	185
1015	3.0	0.3	100
1110	3.0	0.5	160
1214	3.0	0.4	180
1309	3.0	0.6	10
1404	3.0	1.1	340
1516	3.0	0.9	20
1611	3.0	1.2	330
1715	3.0	0.9	5
1828	3.0	1.0	40
1912	3.0	0.8	20
<u>One-Quarter Depth</u>			
612	9.2	0.0	1
708	9.7	0.7	240
808	10.2	0.5	170
910	11.0	0.8	190
1014	11.6	1.1	170
1110	12.2	0.8	150
1213	12.7	0.9	90
1309	12.4	0.5	10
1403	11.9	0.7	335
1515	11.3	0.9	20
1610	10.6	1.5	340
1715	10.0	1.3	10
1827	9.3	0.5	5
1911	9.5	0.6	170
<u>Middepth</u>			
612	18.5	0.2	180
707	19.4	0.6	140
808	20.5	0.6	160
909	22.1	1.0	200
1014	23.3	1.1	170
1110	24.5	0.9	180
1213	25.4	0.2	100
1303	24.8	0.6	240
1403	23.9	0.8	330
1515	22.6	0.6	1

(Continued)

* Directions are in degrees from true north from which the current was flowing.

** Surface measurements were obtained 3.0 ft below top of water surface.

Table 16. (Concluded)

Hour <u>EST</u>	Depth <u>ft</u>	Speed <u>fps</u>	Direction <u>deg</u>
<u>Middepth (Continued)</u>			
1610	21.2	1.2	315
1714	20.0	1.1	1
1827	18.7	0.9	10
1911	19.0	0.6	170
<u>Three-Quarter Depth</u>			
611	27.7	0.4	150
706	29.1	0.8	130
807	30.7	0.5	180
908	33.1	1.2	205
1013	34.9	1.1	180
1109	36.7	1.1	180
1212	38.1	0.5	30
1302	37.2	0.6	355
1402	35.8	0.3	5
1514	33.9	0.7	355
1609	31.8	1.1	310
1713	30.0	1.2	340
1826	28.0	0.8	20
1910	28.5	0.7	160
<u>Bottom†</u>			
610	35.0	0.6	140
705	37.3	0.6	120
807	39.0	0.5	190
908	42.2	1.1	180
1012	44.6	1.0	180
1108	47.0	0.7	190
1209	48.8	0.5	350
1302	47.7	0.7	345
1402	45.8	0.7	340
1514	43.3	0.8	320
1608	40.4	0.6	310
1713	38.0	1.0	305
1825	35.5	1.1	10
1909	36.0	1.0	55

† Bottom measurements were obtained 2.0 ft above actual bottom.

Table 17
Current Data Observed at Sta R6.0B
5 November 1990

<u>Hour</u> <u>EST</u>	<u>Depth</u> <u>ft</u>	<u>Speed</u> <u>fps</u>	<u>Direction</u> <u>deg*</u>
<u>Surface**</u>			
622	3.0	0.2	260
716	3.0	1.0	250
815	3.0	0.9	270
917	3.0	0.9	260
1021	3.0	0.5	160
1120	3.0	0.1	5
1226	3.0	0.7	140
1316	3.0	0.5	30
1423	3.0	0.6	30
1524	3.0	0.6	150
1618	3.0	0.5	150
1730	3.0	0.8	250
1836	3.0	0.6	220
1921	3.0	0.7	310
<u>One-Quarter Depth</u>			
716	8.5	0.0	120
815	9.0	0.2	140
917	9.7	0.5	250
1021	10.5	0.6	140
1120	11.0	0.1	45
1226	11.3	0.4	170
1315	11.2	0.7	20
1422	10.7	0.9	150
1523	9.8	0.5	40
1618	9.3	0.6	165
1730	8.6	0.5	240
1836	8.1	0.4	55
1921	8.2	0.5	70
<u>Middepth</u>			
621	15.4	0.1	180
715	17.0	0.1	120
815	18.1	0.2	90
916	19.4	0.3	255
1021	21.0	0.3	150
1120	22.1	0.3	150
1225	22.6	0.3	20
1315	22.5	0.4	135
1421	21.4	0.3	355?
1523	19.7	0.5	35
1618	18.6	0.5	150

(Continued)

* Directions are in degrees from true north from which the current was flowing.

** Surface measurements were obtained 3.0 ft below top of water surface.

Table 17. (Concluded)

<u>Hour</u> <u>EST</u>	<u>Depth</u> <u>ft</u>	<u>Speed</u> <u>fps</u>	<u>Direction</u> <u>deg</u>
<u>Middepth (Continued)</u>			
1729	17.2	0.3	270
1835	16.3	0.2	20
1920	16.5	0.2	50
<u>Three-Quarter Depth</u>			
714	25.5	0.2	90
814	27.1	0.3	60
916	29.1	0.3	285
1020	31.5	0.3	90
1119	33.1	0.4	170
1221	33.9	0.2	200
1314	33.7	0.3	165
1420	32.1	0.5	5
1522	29.5	0.5	340
1617	27.9	0.4	5
1728	25.8	0.4	275
1834	24.4	0.3	355
1919	24.7	0.5	10
<u>Bottom+</u>			
620	30.8	0.2	180
713	31.9	0.4	130
814	34.2	0.4	65
915	36.8	0.2	55
1020	40.0	0.2	60
1118	42.2	0.5	230
1220	43.2	0.3	300
1314	43.0	0.2	180
1419	40.8	0.6	160
1522	37.4	0.5	20
1616	35.2	0.4	10
1727	32.5	0.3	320
1834	30.6	0.3	20
1918	31.0	0.4	350

+ Bottom measurements were obtained 2.0 ft above actual bottom.

Table 18
Current Data Observed at Sta R7.0B
5 November 1990

<u>Hour</u> <u>EST</u>	<u>Depth</u> <u>ft</u>	<u>Speed</u> <u>fps</u>	<u>Direction</u> <u>deg*</u>
<u>Surface**</u>			
625	3.0	0.1	342
722	3.0	1.3	244
824	3.0	0.5	222
918	3.0	0.8	268
1026	3.0	0.3	258
1126	3.0	0.3	324
1223	3.0	0.4	34
1320	3.0	0.9	18
1420	3.0	0.7	30
1522	3.0	0.9	28
1618	3.0	1.0	22
1720	3.0	0.8	30
1820	3.0	0.6	24
1926	3.0	0.7	354
<u>One-Quarter Depth</u>			
624	10.5	0.2	18
721	11.0	0.9	238
824	11.2	0.8	230
918	12.1	0.7	270
1025	13.0	0.6	288
1125	13.2	0.5	294
1223	13.5	0.3	2
1319	10.5	0.7	26
1419	12.7	0.4	44
1522	12.2	0.8	36
1617	11.5	0.8	28
1719	11.0	0.7	38
1820	10.2	0.6	40
1925	10.5	0.8	2
<u>Middepth</u>			
624	21.0	0.3	330
721	22.0	0.9	248
823	22.4	0.6	258
917	24.2	0.7	268
1025	26.0	0.5	284
1125	26.5	0.9	286
1222	27.0	0.3	342
1319	21.0	0.4	24
1419	25.5	0.5	20
1521	24.4	0.8	36

(Continued)

- * Directions are in degrees from true north from which the current was flowing.
- ** Surface measurements were obtained 3.0 ft below top of water surface.

Table 18. (Concluded)

<u>Hour</u> <u>EST</u>	<u>Depth</u> <u>ft</u>	<u>Speed</u> <u>fps</u>	<u>Direction</u> <u>deg</u>
<u>Middepth (Continued)</u>			
1617	23.0	0.6	18
1719	22.0	0.6	32
1819	20.5	0.5	32
1925	21.0	0.9	352
<u>Three-Quarter Depth</u>			
623	31.5	0.0	228
720	33.0	1.1	236
823	33.6	0.6	262
917	36.3	0.7	282
1024	39.0	0.4	312
1124	39.8	1.4	312
1221	40.5	0.3	314
1318	31.5	0.5	6
1418	38.3	0.4	18
1520	36.6	0.5	28
1616	34.5	0.5	12
1718	33.0	0.7	28
1818	30.8	0.2	38
1924	31.5	0.9	352
<u>Bottom+</u>			
623	40.0	0.2	180
720	42.0	0.8	278
822	42.8	0.5	228
916	46.5	0.4	284
1024	50.0	0.2	338
1124	51.0	0.8	306
1221	52.0	0.2	320
1318	40.0	0.2	356
1418	49.0	0.4	14
1520	46.8	0.5	14
1616	44.0	0.3	4
1718	42.0	0.4	16
1818	39.0	0.4	22
1924	40.0	0.5	348

+ Bottom measurements were obtained 2.0 ft above actual bottom.

Table 19
Current Data Observed at Station R8.0B
5 November 1990

<u>Hour</u> <u>EST</u>	<u>Depth</u> <u>ft</u>	<u>Speed</u> <u>fps</u>	<u>Direction</u> <u>deg*</u>
<u>Surface**</u>			
617	3.0	0.1	358
712	3.0	0.2	80
810	3.0	0.3	68
910	3.0	0.4	112
1014	3.0	0.5	68
1118	3.0	0.2	58
1213	3.0	0.4	82
1312	3.0	0.4	30
1412	3.0	0.8	6
1513	3.0	0.4	276
1610	3.0	1.0	340
1711	3.0	1.0	334
1830	3.0	0.5	280
1914	3.0	0.2	216
<u>One-Quarter Depth</u>			
616	9.2	0.1	342
712	9.8	0.0	66
810	10.5	0.2	78
910	10.9	0.3	94
1013	11.7	0.2	60
1117	12.4	0.4	40
1212	12.5	0.6	280
1311	12.5	0.3	46
1412	12.2	0.3	74
1513	11.6	0.4	274
1609	10.8	0.9	336
1710	9.9	1.4	338
1830	9.2	0.5	280
1914	9.5	0.1	214
<u>Middepth</u>			
615	18.5	0.3	348
711	19.7	0.1	66
809	21.0	0.3	98
909	21.7	0.4	114
1013	23.2	0.6	70
1117	24.8	0.6	114
1212	25.0	0.3	90
1311	25.0	0.5	252
1411	24.5	0.5	78
1512	23.2	0.3	70

(Continued)

- * Directions are in degrees from true north from which the current was flowing.
- ** Surface measurements were obtained 3.0 ft below top of water surface.

Table 19. (Concluded)

<u>Hour</u> <u>EST</u>	<u>Depth</u> <u>ft</u>	<u>Speed</u> <u>fps</u>	<u>Direction</u> <u>deg</u>
<u>Middepth (Continued)</u>			
1609	21.5	0.5	322
1710	19.8	1.1	332
1829	18.5	0.3	298
1913	19.0	0.1	238
<u>Three-Quarter Depth</u>			
615	27.8	0.3	348
711	29.6	0.2	72
809	31.5	0.4	86
909	32.6	0.8	128
1012	34.9	0.6	74
1116	37.2	0.4	90
1211	37.5	0.5	80
1310	37.5	0.5	240
1411	36.8	0.1	22
1512	33.8	0.2	30
1608	32.7	0.4	330
1709	29.7	0.6	330
1829	27.8	0.1	294
1913	28.5	0.1	326
<u>Bottom+</u>			
614	35.0	0.1	346
710	37.5	0.0	72
808	40.0	0.0	88
908	41.5	0.2	114
1012	44.5	0.4	90
1116	47.5	0.4	86
1211	48.0	0.4	54
1310	48.0	0.5	230
1410	47.0	0.2	10
1511	44.5	0.1	20
1608	41.0	0.4	320
1709	37.5	0.7	320
1828	35.0	0.2	284
1912	36.0	0.2	322

+ Bottom measurements were obtained 2.0 ft above actual bottom.

Table 20
Current Data Observed at Station R9.0B
5 November 1990

<u>Hour</u> <u>EST</u>	<u>Depth</u> <u>ft</u>	<u>Speed</u> <u>fps</u>	<u>Direction</u> <u>deg*</u>
<u>Surface**</u>			
606	3.0	0.3	358
702	3.0	0.7	20
802	3.0	0.2	34
902	3.0	0.3	12
1003	3.0	0.2	54
1102	3.0	0.3	66
1202	3.0	0.4	70
1303	3.0	0.9	38
1402	3.0	0.3	30
1502	3.0	0.2	248
1602	3.0	0.3	172
1702	3.0	0.3	110
1804	3.0	0.2	118
1902	3.0	0.5	54
<u>One-Quarter Depth</u>			
605	9.0	0.4	352
702	9.5	0.7	24
801	9.5	0.4	22
902	9.7	0.1	28
1002	11.2	0.0	74
1101	12.5	0.8	40
1202	12.5	0.6	34
1302	12.4	0.8	38
1402	12.1	0.1	40
1501	11.5	0.4	220
1601	10.8	0.3	308
1702	10.0	0.1	134
1804	9.5	0.6	74
1901	9.0	0.2	94
<u>Middepth</u>			
604	18.0	0.4	330
701	19.0	0.3	42
801	19.0	0.0	14
901	19.5	0.3	34
1002	22.5	0.1	66
1101	25.0	0.2	98
1201	25.0	0.2	62
1302	24.8	0.1	80
1401	24.2	0.0	64
1501	23.0	0.2	258

(Continued)

* Directions are in degrees from true north from which the current was flowing.

** Surface measurements were obtained 3.0 ft below top of water surface.

Table 20. (Concluded)

<u>Hour</u> <u>EST</u>	<u>Depth</u> <u>ft</u>	<u>Speed</u> <u>fps</u>	<u>Direction</u> <u>deg</u>
<u>Middepth (Continued)</u>			
1601	21.5	0.2	350
1701	20.0	0.2	92
1803	19.0	0.2	46
1901	18.0	0.4	88
<u>Three-Quarter Depth</u>			
603	27.0	0.4	314
701	28.5	0.1	10
800	28.5	0.1	52
901	29.3	0.1	24
1001	33.8	0.1	66
1100	37.5	0.2	155
1201	37.5	0.1	56
1301	37.2	0.2	70
1401	36.4	0.1	110
1500	34.5	0.3	36
1600	32.3	0.3	322
1701	30.0	0.1	70
1803	28.5	0.2	74
1900	27.0	0.1	190
<u>Bottom+</u>			
603	34.0	0.4	296
700	36.0	0.0	10
800	36.0	0.1	50
900	38.0	0.2	14
1001	43.0	0.1	64
1100	48.0	0.1	150
1200	48.0	0.2	30
1301	47.5	0.3	38
1400	46.5	0.1	84
1500	44.0	0.4	10
1600	41.0	0.3	290
1700	38.0	0.2	62
1802	36.0	0.1	26
1900	34.0	0.1	210

+ Bottom measurements were obtained 2.0 ft above actual bottom.

Table 21
Current Data Observed at Station R10.0B
5 November 1990

<u>Hour</u> <u>EST</u>	<u>Depth</u> <u>ft</u>	<u>Speed</u> <u>fps</u>	<u>Direction</u> <u>deg*</u>
<u>Surface**</u>			
616	3.0	0.1	75
702	3.0	0.1	40
803	3.0	0.2	130
907	3.0	0.3	350
1004	3.0	0.1	210
1102	3.0	0.2	340
1203	3.0	0.3	150
1303	3.0	0.6	135
1403	3.0	0.8	120
1459	3.0	0.8	120
1602	3.0	1.1	130
1703	3.0	1.0	130
1802	3.0	0.5	135
1903	3.0	0.4	120
<u>One-Quarter Depth</u>			
615	9.5	0.3	95
702	8.8	0.1	5
802	9.4	0.4	300
906	10.6	0.5	350
1003	10.9	0.4	260
1102	12.2	0.4	330
1202	12.5	0.3	350
1302	12.4	0.2	125
1403	12.1	0.4	150
1458	11.5	0.6	115
1602	10.7	0.5	120
1702	10.2	0.6	110
1802	9.7	0.5	150
1902	9.5	0.1	340
<u>Middepth</u>			
614	19.1	0.2	65
701	17.6	0.2	10
801	18.8	0.1	90
902	21.2	0.5	350
1003	21.7	0.6	315
1101	24.4	0.4	320
1202	25.0	0.2	310
1301	24.8	0.2	185
1402	24.2	0.2	170
1458	23.0	0.3	85

(Continued)

* Directions are in degrees from true north from which the current was flowing.

** Surface measurements were obtained 3.0 ft below top of water surface

Table 21. (Concluded)

Hour EST	Depth ft	Speed fps	Direction deg
<u>Middepth (Continued)</u>			
1601	21.4	0.4	120
1701	20.3	0.6	140
1801	19.3	0.3	140
1902	18.9	0.1	305
<u>Three-Quarter Depth</u>			
614	28.6	0.2	65
701	26.4	0.2	20
801	28.2	0.2	70
902	31.8	0.1	270
1002	32.6	0.2	310
1101	36.6	0.3	310
1201	37.5	0.3	315
1301	37.2	0.2	190
1402	36.3	0.2	50
1457	34.5	0.3	60
1601	32.1	0.3	80
1701	30.5	0.1	60
1800	29.0	0.1	230
1901	28.4	0.1	320
<u>Bottom+</u>			
613	36.1	0.2	285
700	35.2	0.1	40
800	35.6	0.2	40
901	40.4	0.2	295
1000	41.4	0.2	270
1100	46.8	0.1	320
1200	48.0	0.5	320
1300	47.6	0.2	190
1401	46.3	0.2	60
1456	44.0	0.2	110
1600	40.8	0.5	180
1700	38.6	0.1	60
1800	36.6	0.1	185
1900	35.7	0.1	5

+ Bottom measurements were obtained 2.0 ft above actual bottom.

Table 22
Current Data Observed at Station R11.0B
5 November 1990

<u>Hour</u> <u>EST</u>	<u>Depth</u> <u>ft</u>	<u>Speed</u> <u>fps</u>	<u>Direction</u> <u>deg*</u>
<u>Surface**</u>			
624	3.0	0.2	50
710	3.0	0.4	250
826	3.0	0.1	230
915	3.0	0.4	220
1013	3.0	0.4	230
1120	3.0	0.3	280
1211	3.0	0.2	190
1311	3.0	0.8	80
1412	3.0	0.7	90
1504	3.0	1.2	80
1609	3.0	1.0	70
1712	3.0	0.7	75
1810	3.0	0.5	85
1910	3.0	0.2	20
<u>One-Quarter Depth</u>			
623	9.4	0.2	70
710	9.9	0.1	265
825	10.4	0.2	225
915	11.2	0.4	210
1012	11.5	0.6	240
1120	11.9	0.4	275
1210	12.3	0.2	190
1310	12.6	0.2	90
1411	12.0	0.4	100
1503	11.6	0.9	70
1608	10.7	0.9	75
1711	9.9	0.8	75
1809	9.4	0.5	105
1910	9.3	0.4	25
<u>Middepth</u>			
622	18.8	0.2	195
709	19.8	0.5	240
825	20.7	0.4	260
914	22.4	0.6	225
1011	23.0	0.5	240
1119	23.9	0.3	290
1210	24.7	0.3	190
1310	25.1	0.2	350
1410	23.9	0.2	80
1505	23.1	0.4	70

(Continued)

* Directions are in degrees from true north from which the current was flowing.

** Surface measurements were obtained 3.0 ft below top of water surface.

Table 22. (Concluded)

Hour <u>EST</u>	Depth <u>ft</u>	Speed <u>fps</u>	Direction <u>deg</u>
<u>Middepth (Continued)</u>			
1607	21.4	0.7	60
1710	19.8	0.5	90
1809	18.8	0.4	145
1909	18.6	0.5	280
<u>Three-Quarter Depth</u>			
622	28.2	0.4	175
709	29.7	0.7	235
825	31.1	0.4	260
913	33.6	0.3	195
1010	34.5	0.5	215
1118	35.8	0.2	185
1209	37.1	0.5	210
1309	37.7	0.4	60
1409	35.9	0.2	5
1502	34.7	0.7	45
1607	32.1	0.2	100
1710	29.7	0.5	140
1808	28.2	0.6	170
1909	27.9	0.5	280
<u>Bottom+</u>			
621	35.6	0.4	170
708	37.6	0.4	185
824	39.4	0.3	220
912	42.8	0.1	165
1009	43.9	0.5	290
1108	45.7	0.3	312
1209	47.3	0.3	255
1308	48.3	0.3	40
1408	45.8	0.4	330
1502	44.1	0.3	35
1606	40.7	0.4	80
1709	37.5	0.2	180
1807	35.6	0.6	160
1908	35.2	0.3	290

* Bottom measurements were obtained 2.0 ft above actual bottom.

Table 23
Current Data Observed at Station R12.0B
5 November 1990

<u>Hour</u> <u>EST</u>	<u>Depth</u> <u>ft</u>	<u>Speed</u> <u>fps</u>	<u>Direction</u> <u>deg*</u>
<u>Surface**</u>			
630	3.0	0.3	60
719	3.0	0.1	90
833	3.0	0.2	110
922	3.0	0.3	30
1024	3.0	0.3	180
1131	3.0	0.2	175
1221	3.0	0.2	170
1320	3.0	0.2	135
1420	3.0	0.5	20
1511	3.0	1.4	25
1617	3.0	0.5	35
1722	3.0	0.5	35
1820	3.0	0.4	20
1917	3.0	0.1	190
<u>One-Quarter Depth</u>			
630	9.1	0.2	125
718	9.5	0.1	170
833	10.3	0.4	155
922	10.7	0.2	195
1022	12.1	0.2	220
1130	13.3	0.2	200
1220	13.4	0.2	205
1319	13.2	0.2	10
1419	12.6	0.2	5
1510	12.0	0.3	50
1616	11.2	0.2	50
1721	10.4	0.2	10
1819	10.0	0.4	20
1916	9.2	0.2	185
<u>Middepth</u>			
629	18.2	0.2	80
717	18.9	0.1	105
832	20.5	0.1	250
921	21.4	0.3	232
1021	24.2	0.5	180
1130	26.5	0.3	220
1219	26.8	0.1	220
1319	26.3	0.2	15
1418	25.2	0.2	50
1510	23.9	0.3	50

(Continued)

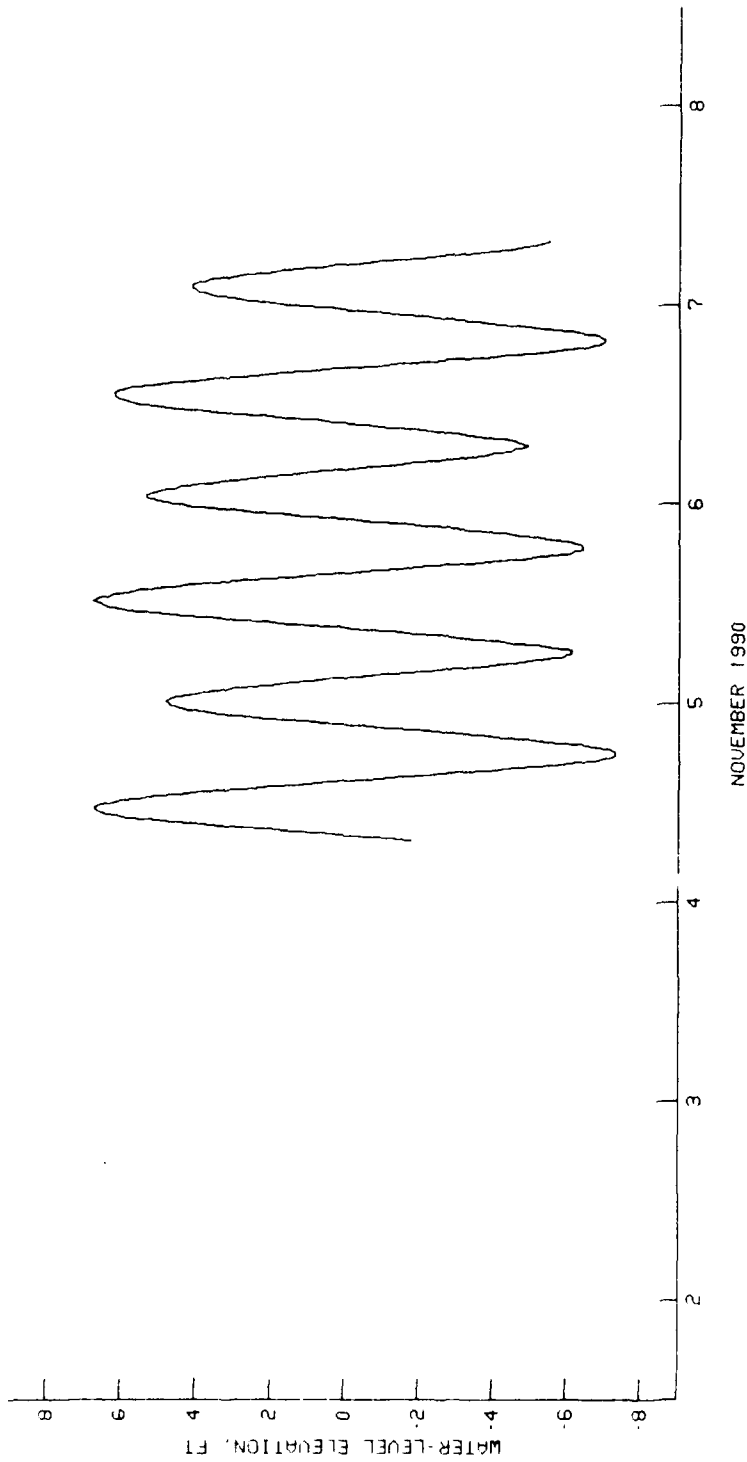
* Directions are in degrees from true north from which the current was flowing.

** Surface measurements were obtained 3.0 ft below top of water surface.

Table 23. (Concluded)

<u>Hour</u> <u>EST</u>	<u>Depth</u> <u>ft</u>	<u>Speed</u> <u>fps</u>	<u>Direction</u> <u>deg</u>
<u>One-Quarter Depth (Continued)</u>			
1616	22.4	0.2	60
1721	21.7	0.1	15
1818	20.0	0.3	10
1916	18.5	0.1	170
<u>Three-Quarter Depth</u>			
629	27.3	0.2	132
716	28.4	0.3	145
831	30.8	0.1	240
921	32.1	0.3	232
1020	36.3	0.2	180
1129	39.8	0.3	270
1218	40.2	0.1	340
1318	39.5	0.2	358
1418	37.8	0.1	350
1509	35.9	0.3	355
1615	33.6	0.1	5
1720	32.1	0.1	110
1817	30.0	0.1	325
1915	27.7	0.1	170
<u>Bottom+</u>			
628	34.4	0.2	120
715	35.8	0.3	150
830	39.0	0.1	285
920	40.8	0.2	185
1019	46.3	0.4	175
1129	51.0	0.4	328
1217	51.6	0.1	350
1317	50.6	0.2	5
1417	48.4	0.1	180
1509	45.8	0.2	330
1614	42.8	0.1	25
1720	39.4	0.4	120
1816	37.9	0.3	320
1915	35.0	0.1	120

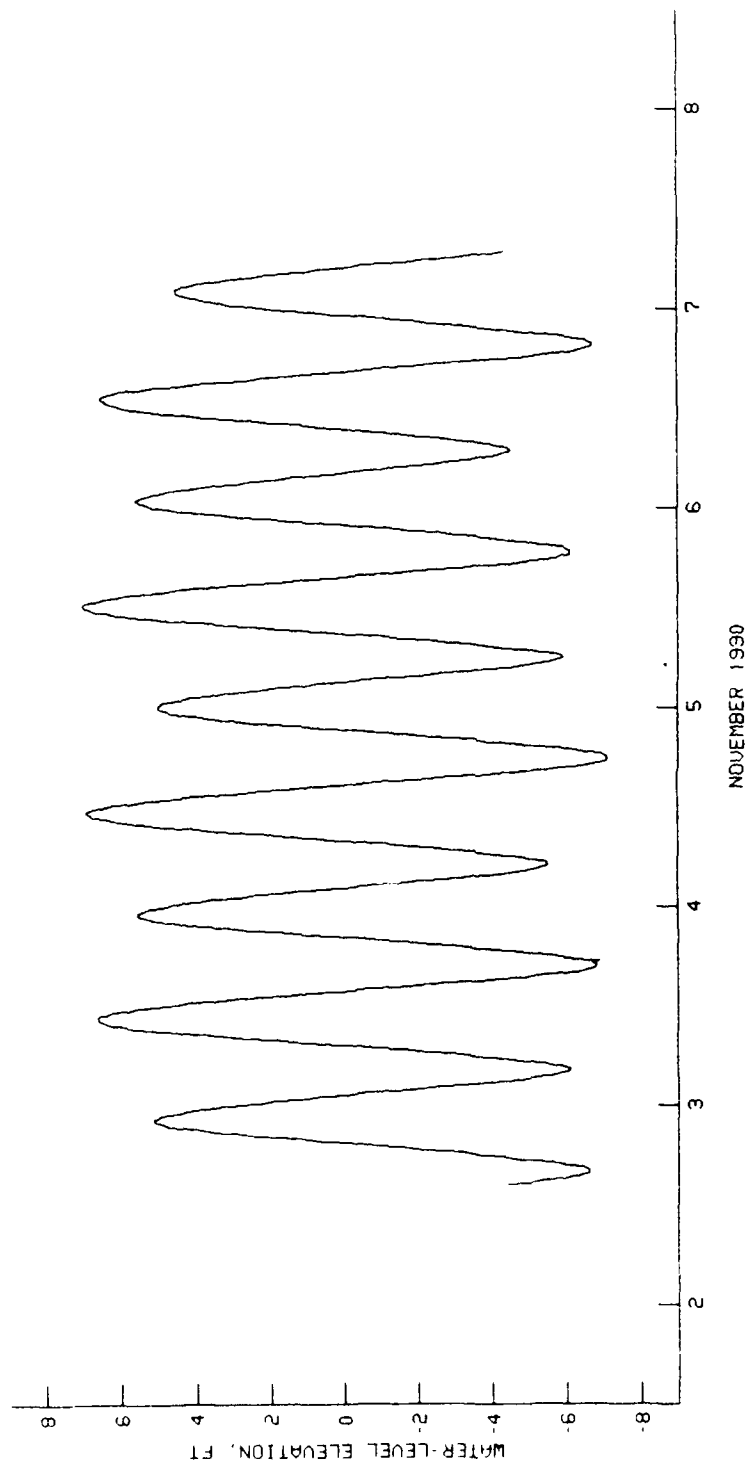
+ Bottom measurements were obtained 2.0 ft above actual bottom.



WATER-LEVEL ELEVATION*
AT STATION S2.0
4 - 7 NOVEMBER 1990

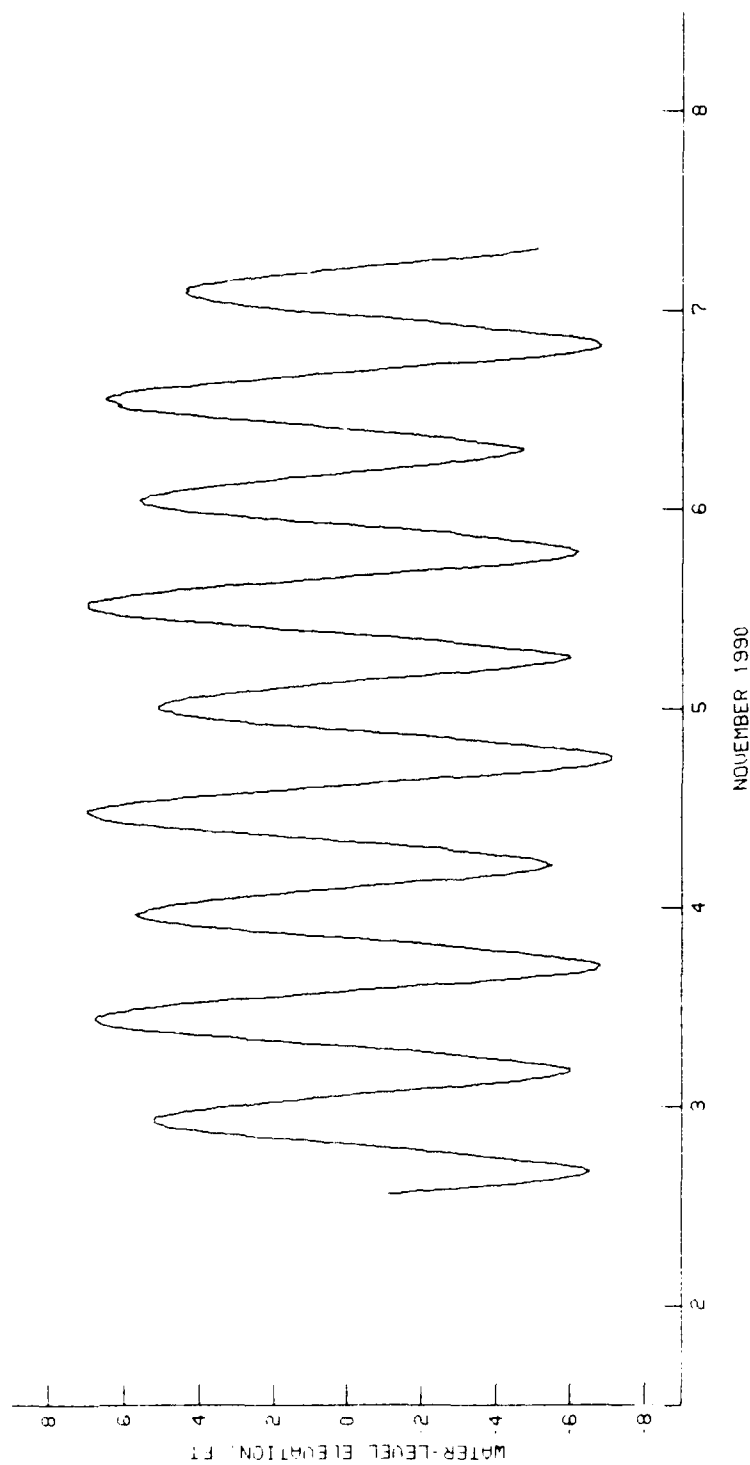
* MEAN WATER-LEVEL ELEVATION USED AS DATUM

PLATE 2



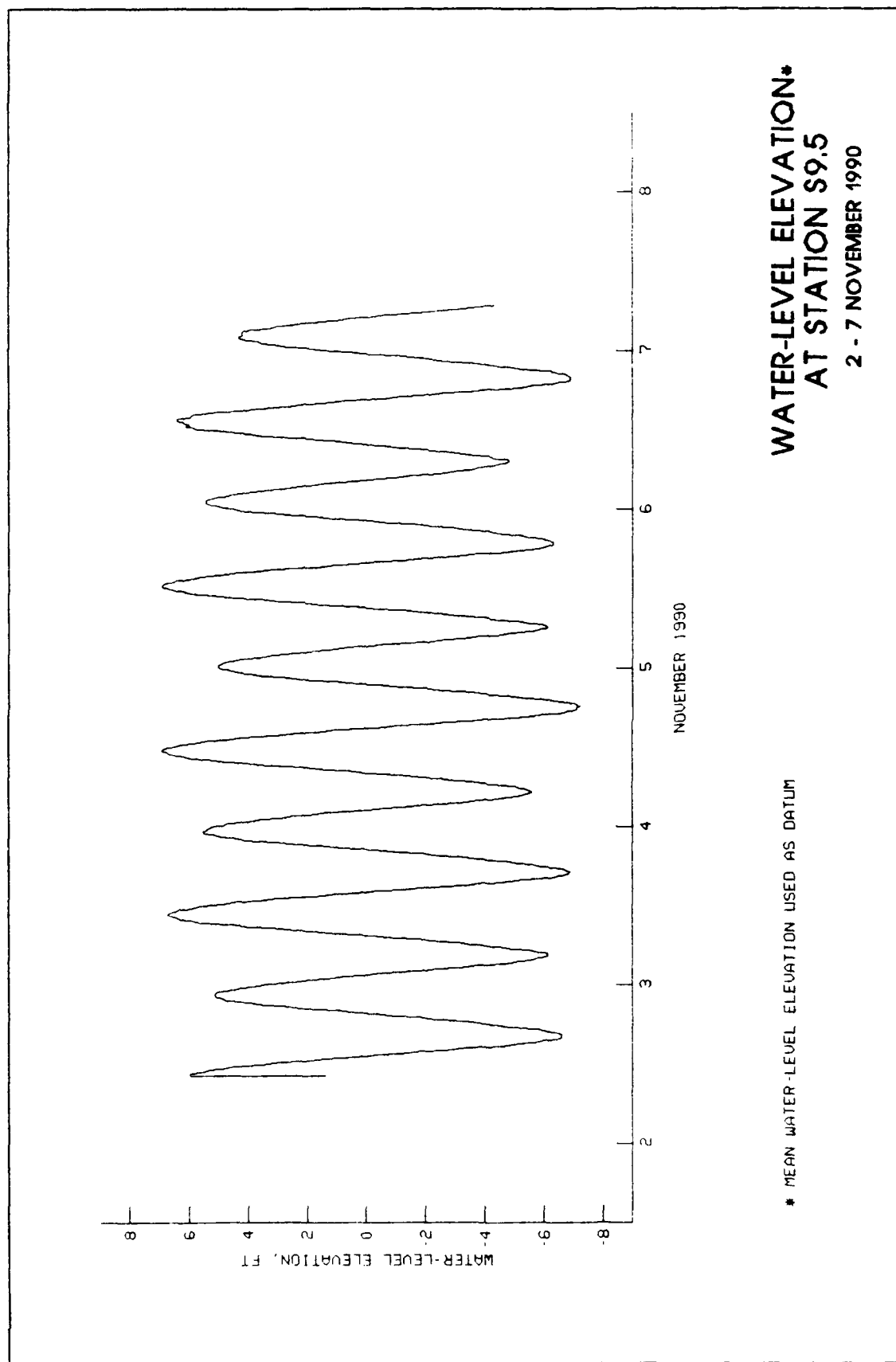
WATER-LEVEL ELEVATION*
AT STATION S2.8
2 - 7 NOVEMBER 1990

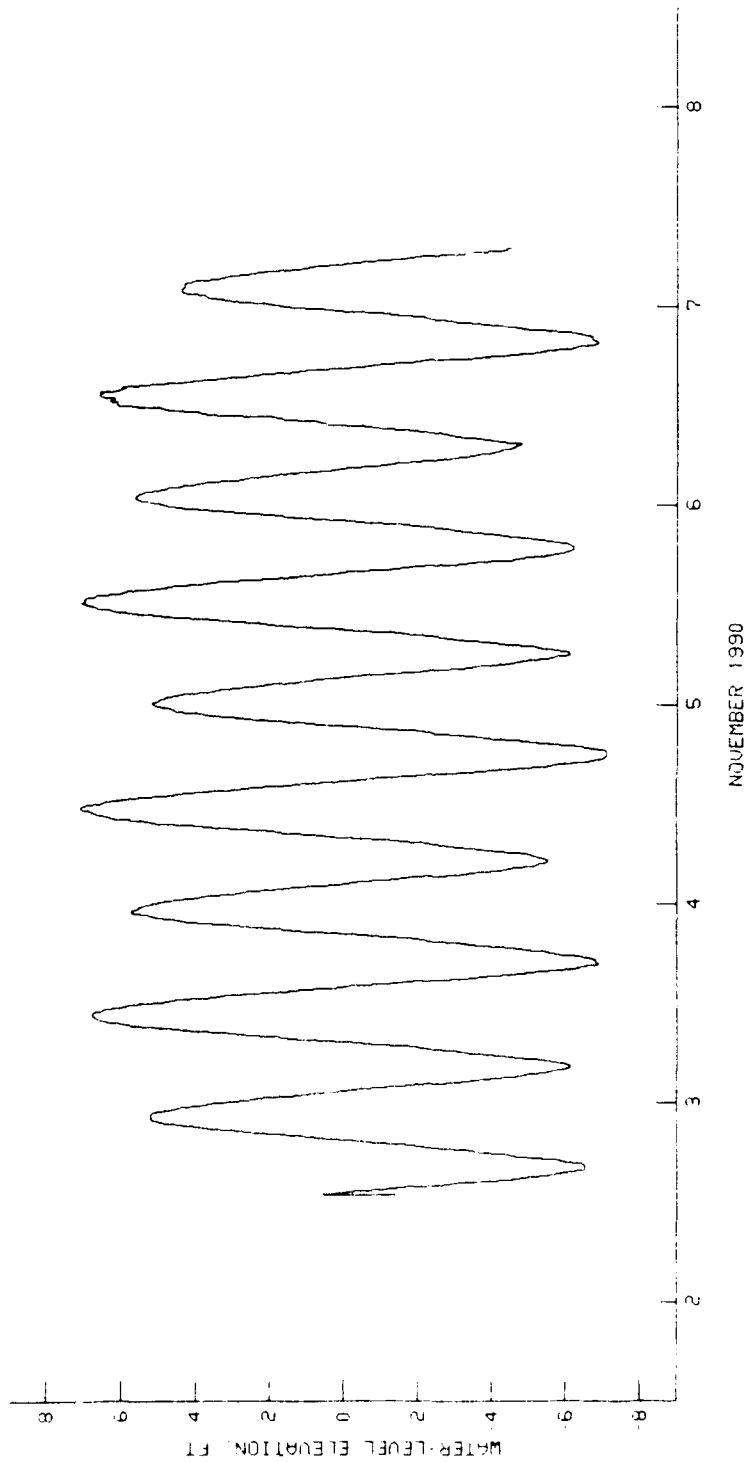
* MEAN WATER-LEVEL ELEVATION USED AS DATUM



WATER-LEVEL ELEVATION*
AT STATION S5.8
2 - 7 NOVEMBER 1990

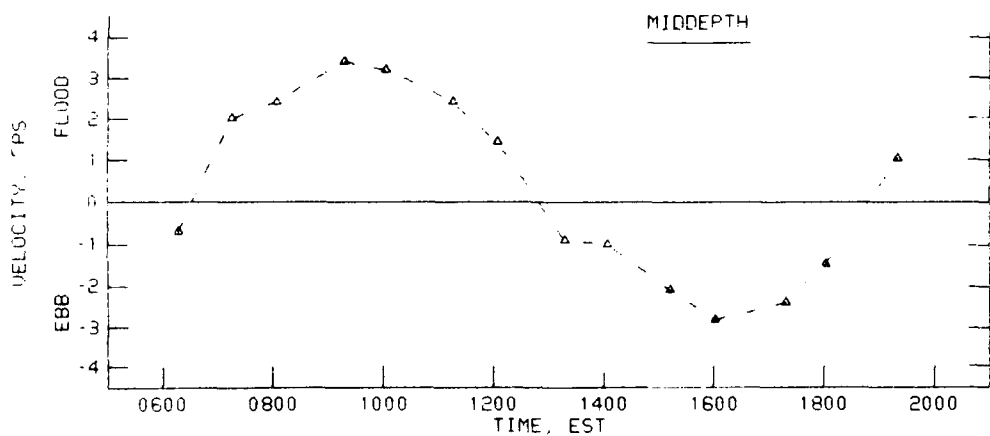
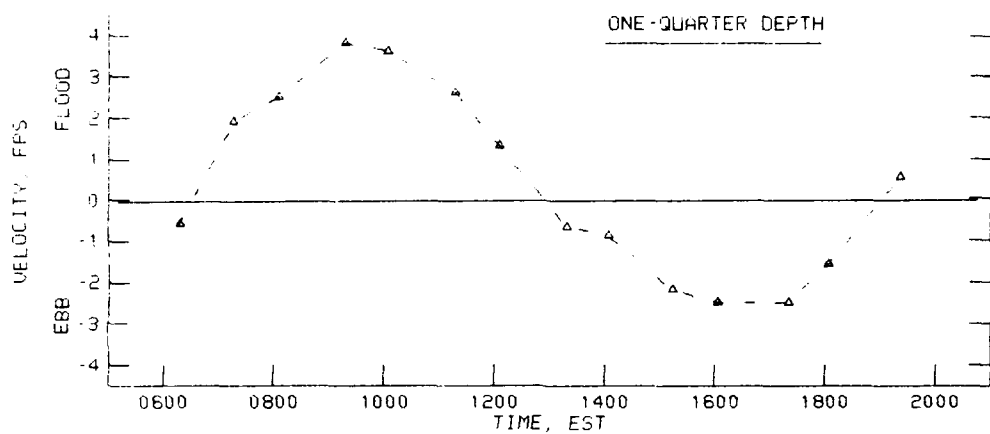
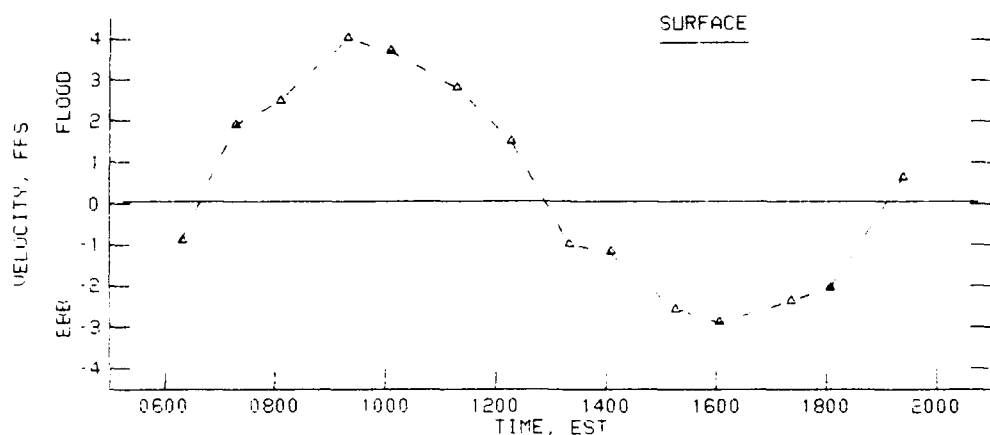
* MEAN WATER-LEVEL ELEVATION USED AS DATUM





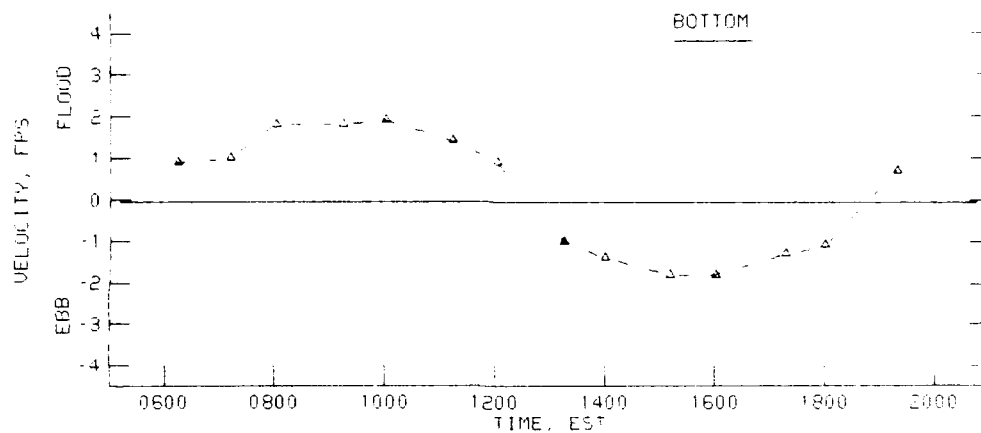
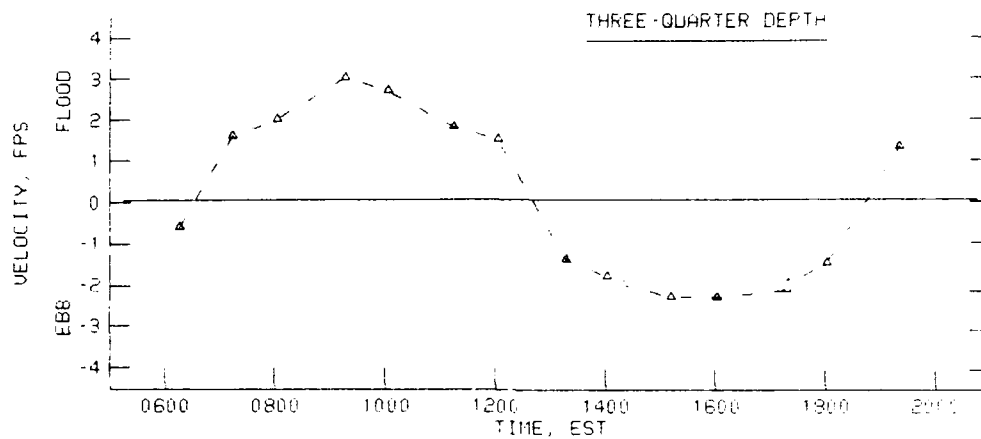
WATER-LEVEL ELEVATION* **AT STATION S12.5** **2 - 7 NOVEMBER 1990**

* MEAN WATER-LEVEL ELEVATION USED AS DATUM

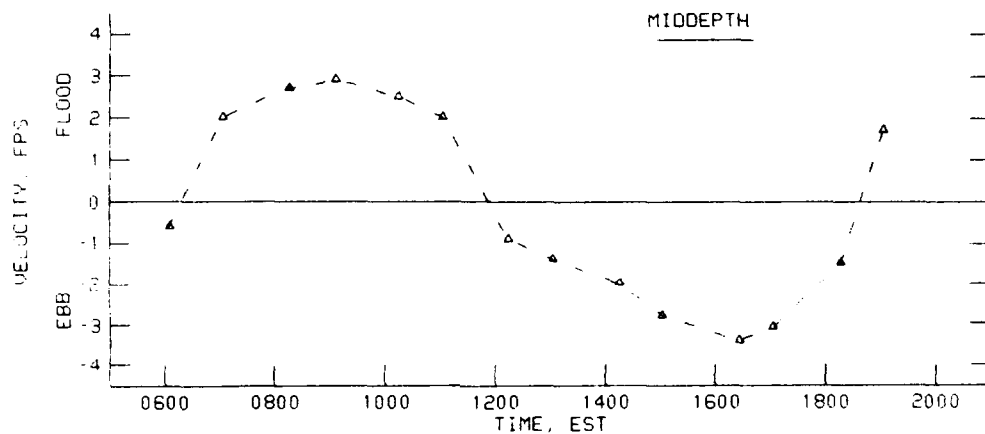
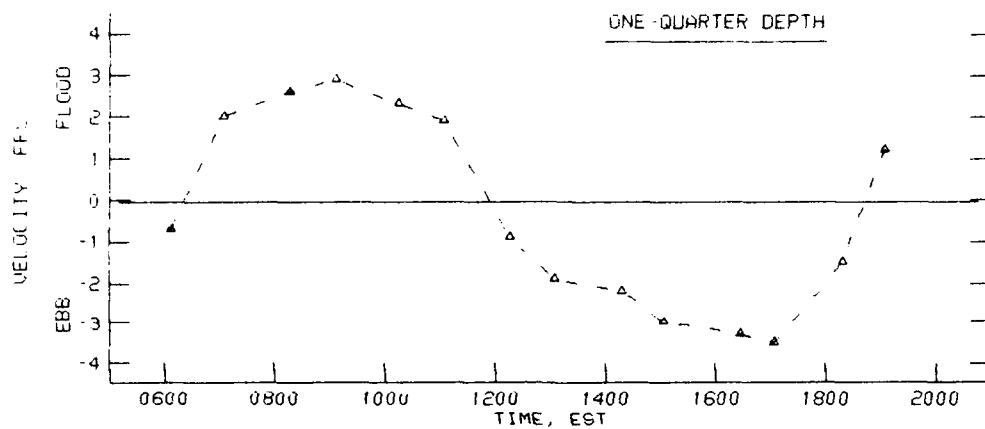
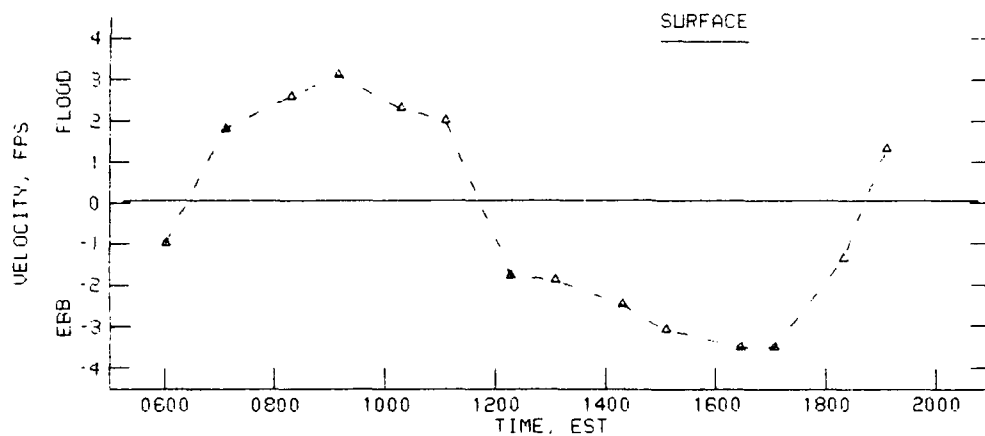


**VELOCITIES AT STATION R1.0A
SURFACE, ONE-QUARTER DEPTH,
AND MIDDEPTH**

5 NOVEMBER 1990

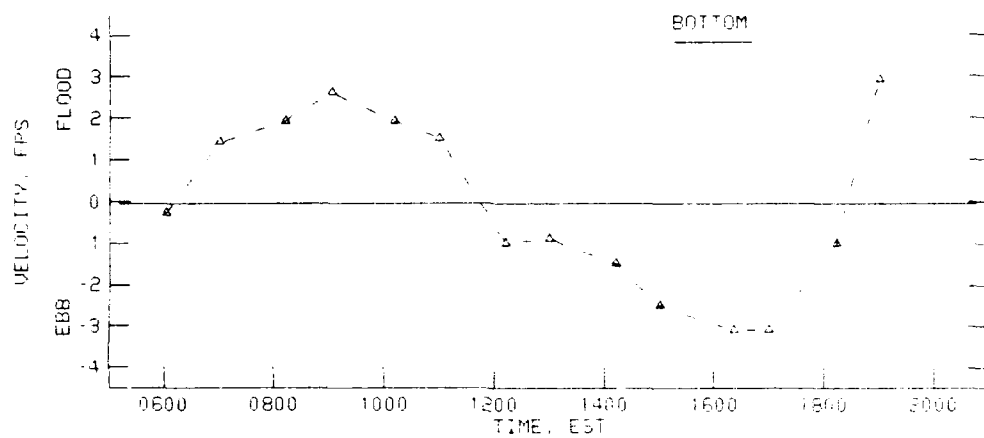
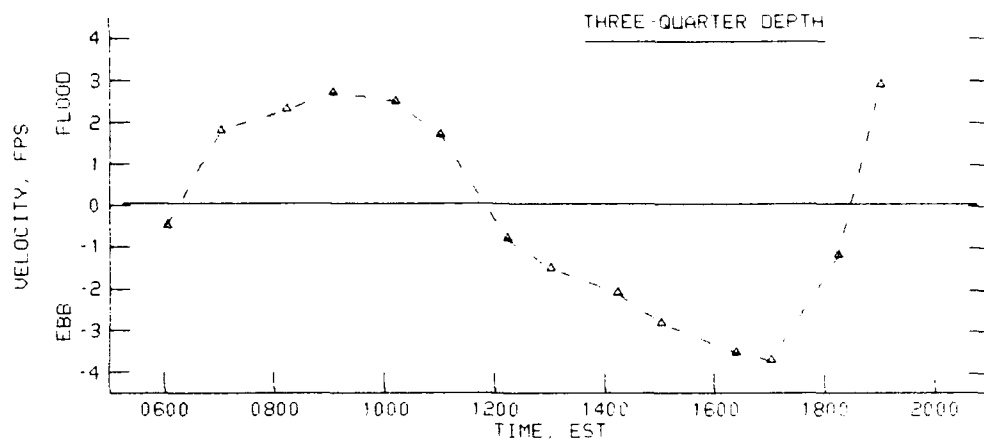


VELOCITIES AT STATION R1.0A
THREE-QUARTER DEPTH AND BOTTOM
5 NOVEMBER 1990

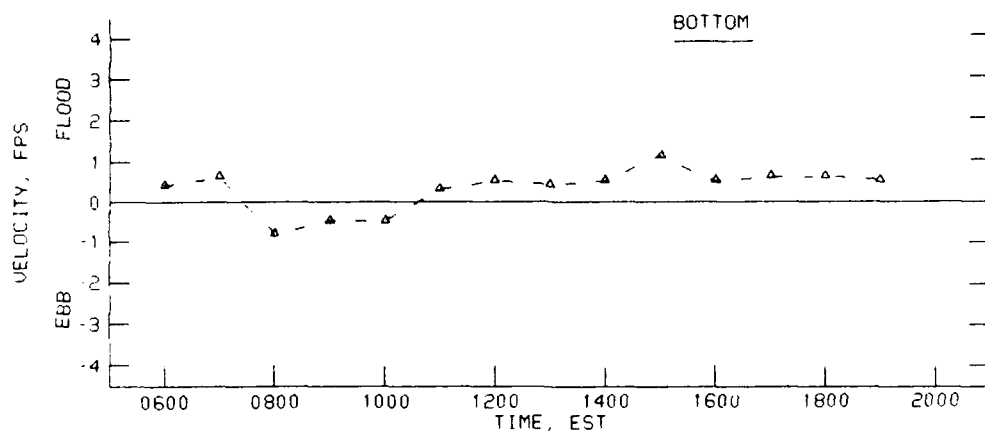
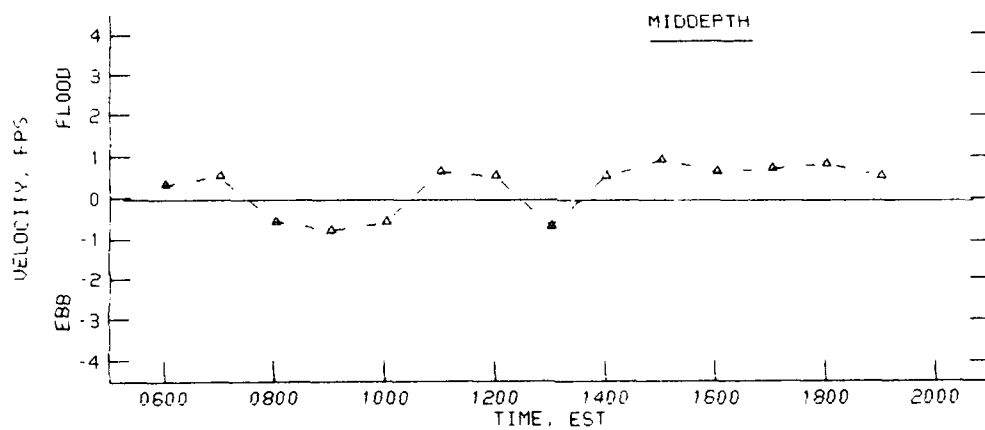
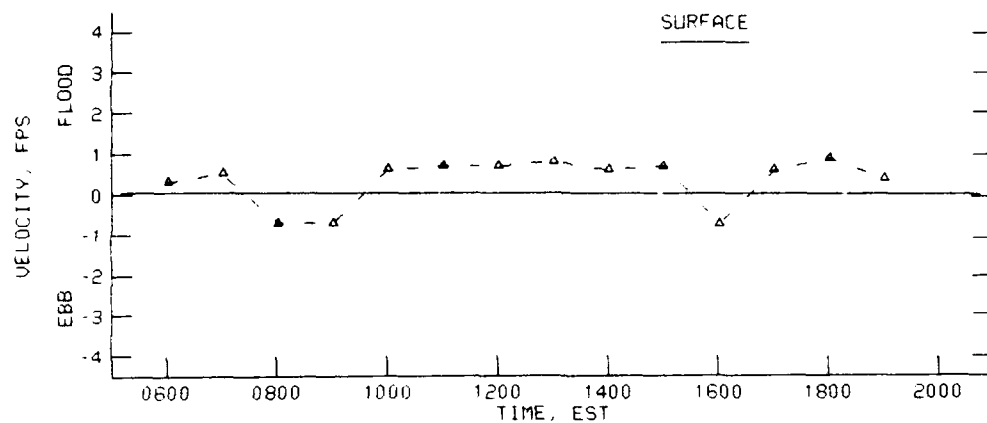


**VELOCITIES AT STATION R1.0B
SURFACE, ONE-QUARTER DEPTH,
AND MIDDEPTH**

5 NOVEMBER 1990

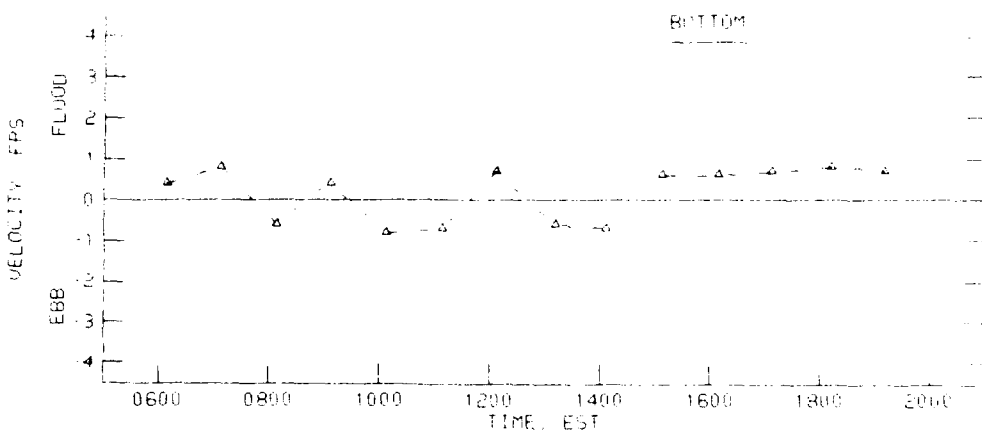
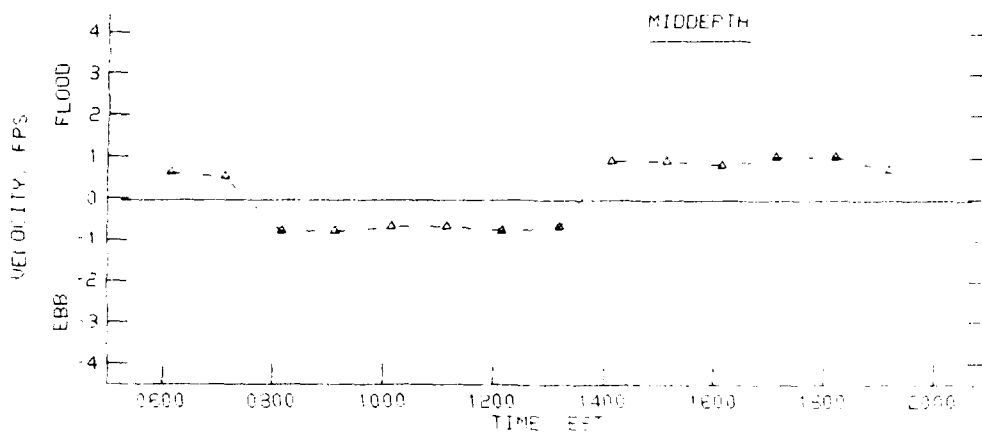
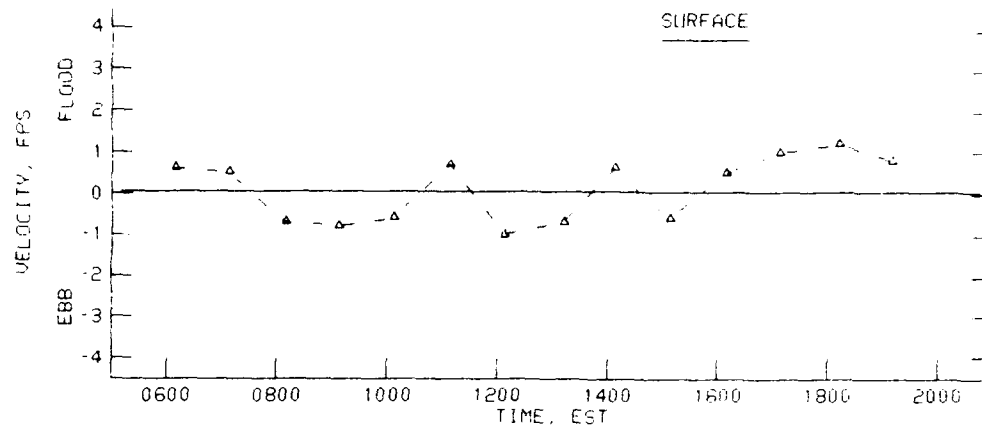


VELOCITIES AT STATION R1.0B
THREE-QUARTER DEPTH AND BOTTOM
5 NOVEMBER 1990



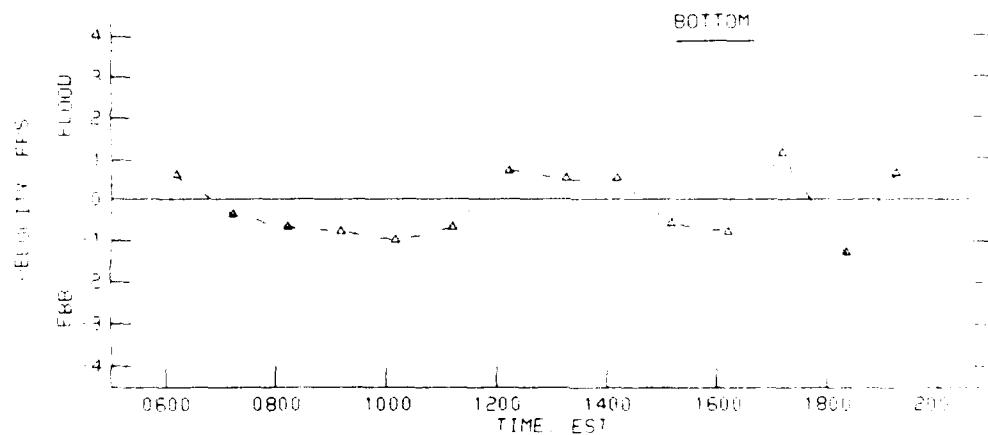
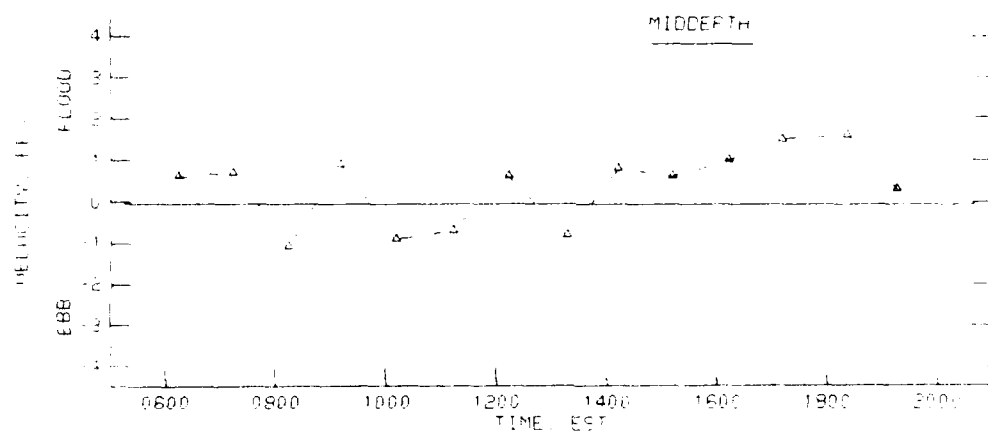
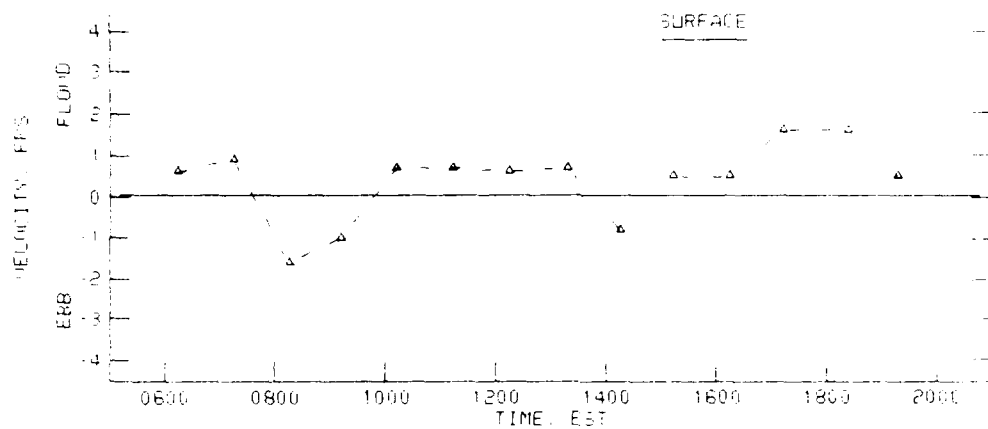
**VELOCITIES AT STATION R2.0A
SURFACE, MIDDEPTH,
AND BOTTOM**

5 NOVEMBER 1990



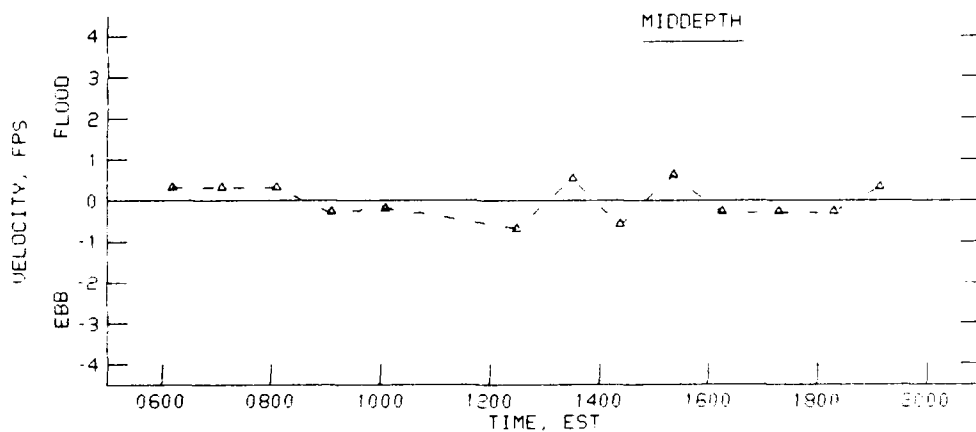
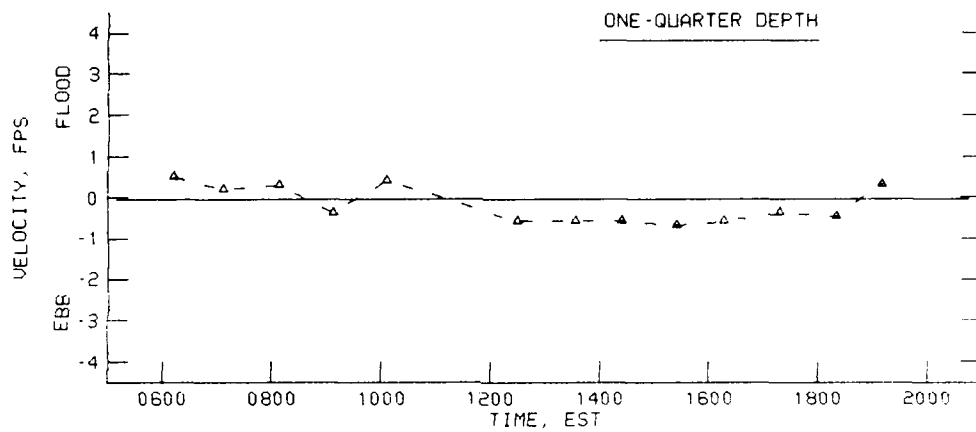
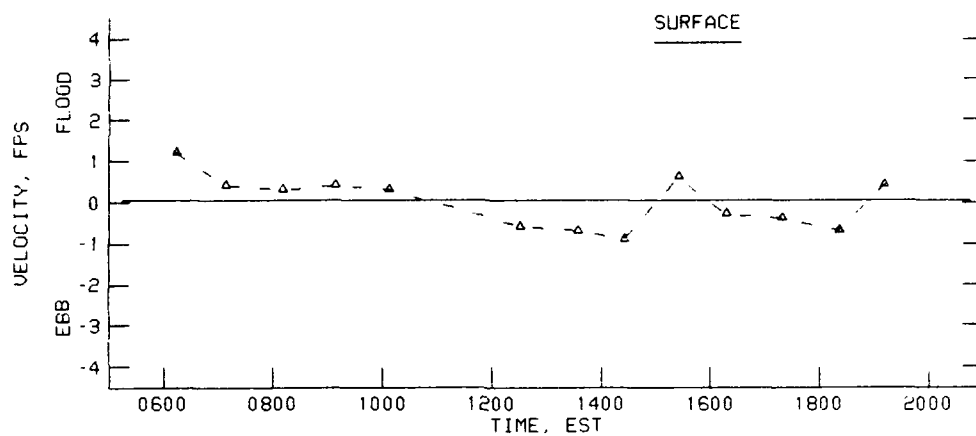
**VELOCITIES AT STATION R2.0B
SURFACE, MIDDEPTH,
AND BOTTOM**

5 NOVEMBER 1990



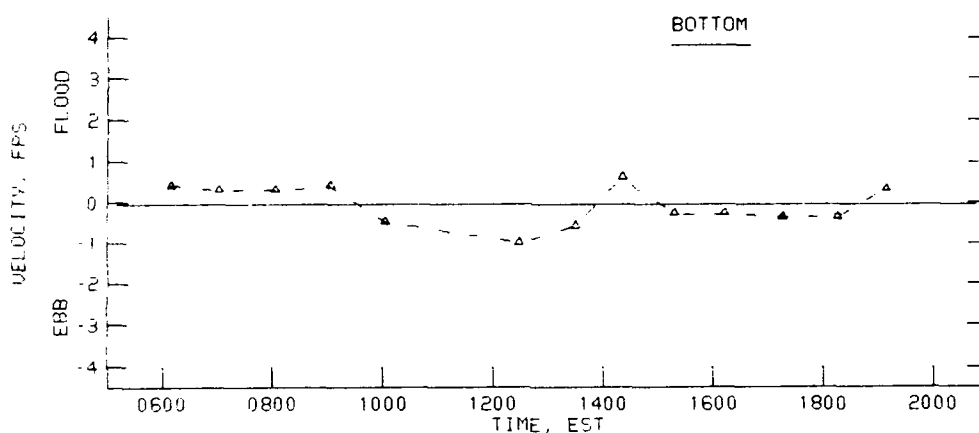
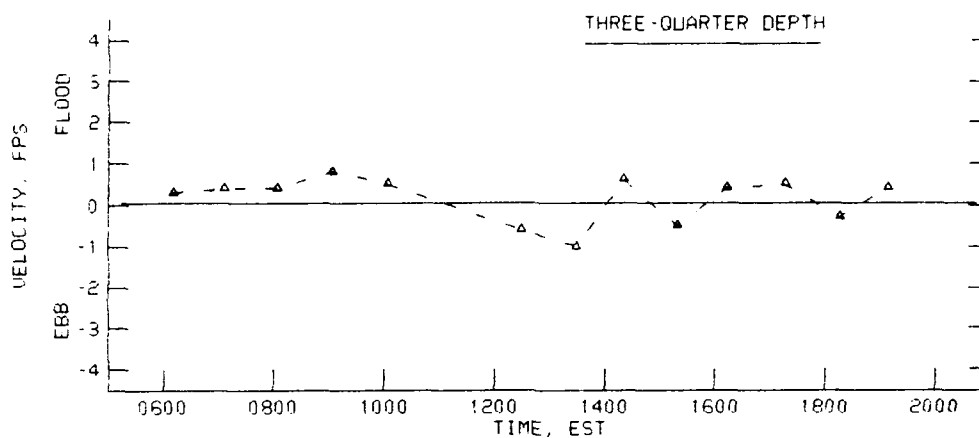
**VELOCITIES AT STATION R2.0C
SURFACE, MIDDEPTH,
AND BOTTOM**

5 NOVEMBER 1990

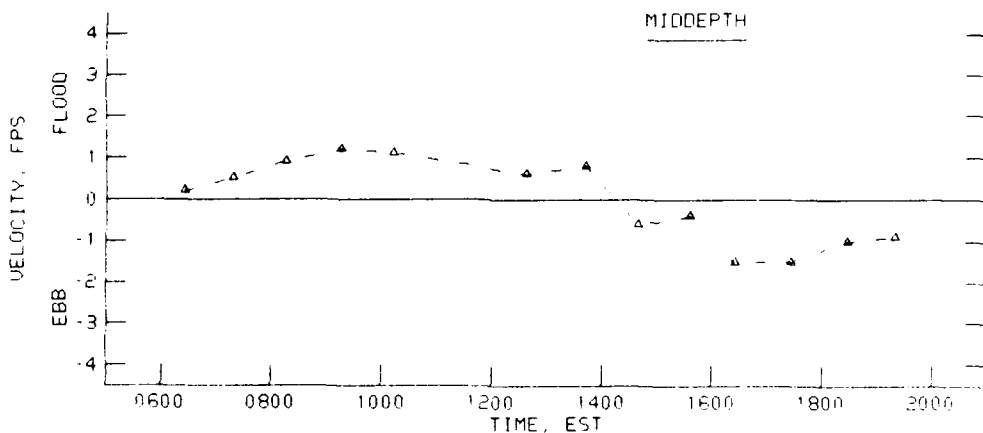
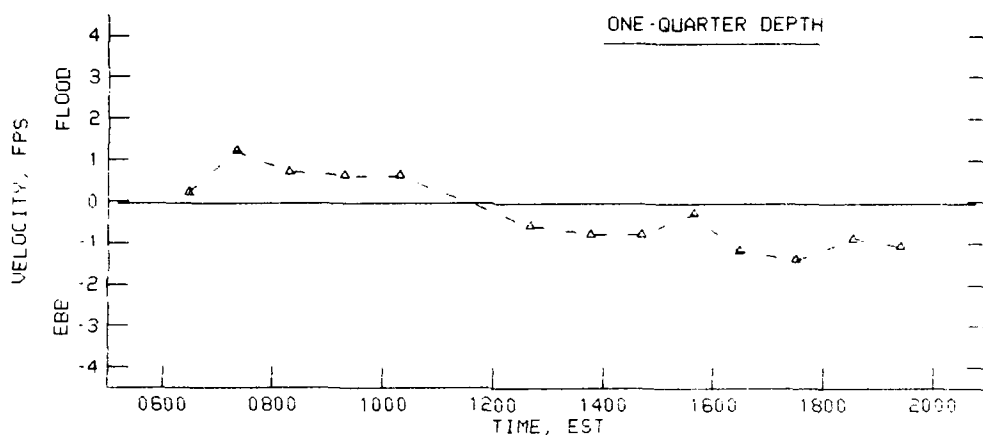
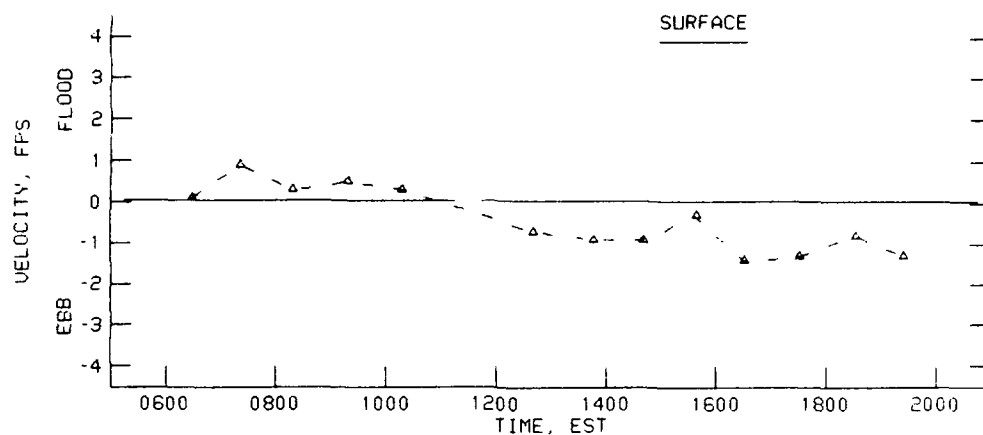


**VELOCITIES AT STATION R3.0A
SURFACE, ONE-QUARTER DEPTH,
AND MIDDEPTH**

5 NOVEMBER 1990

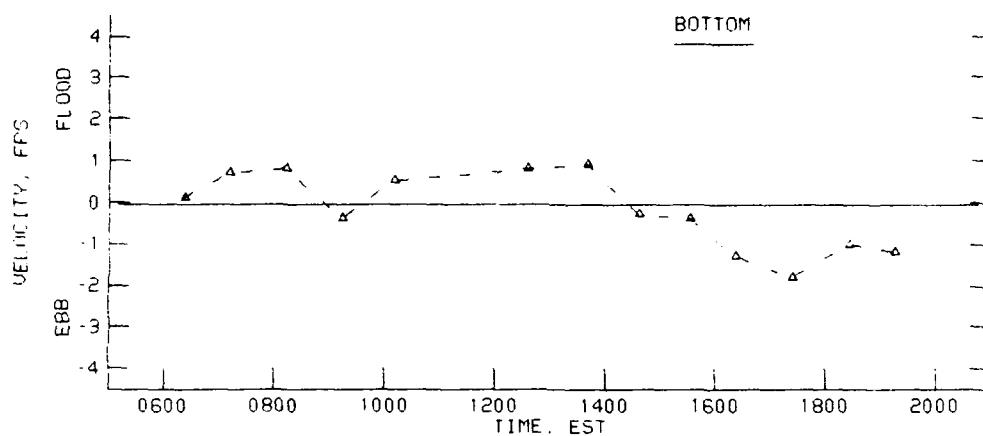
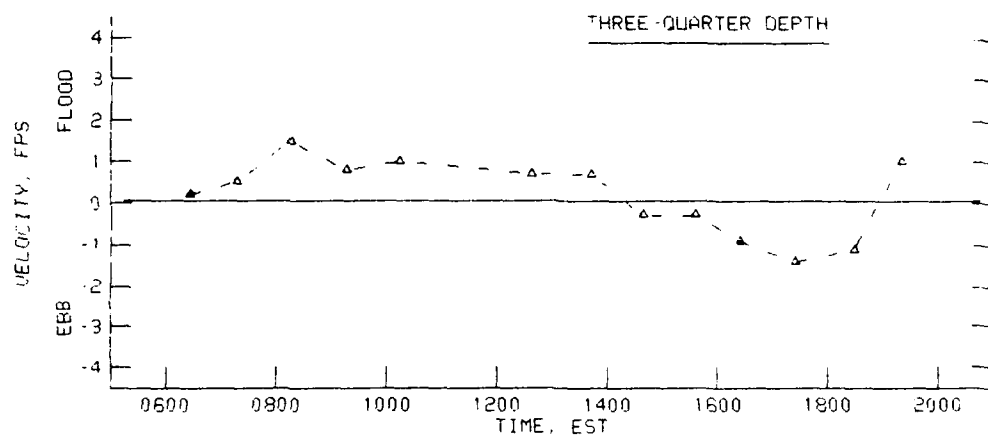


VELOCITIES AT STATION R3.0A
THREE-QUARTER DEPTH AND BOTTOM
5 NOVEMBER 1990

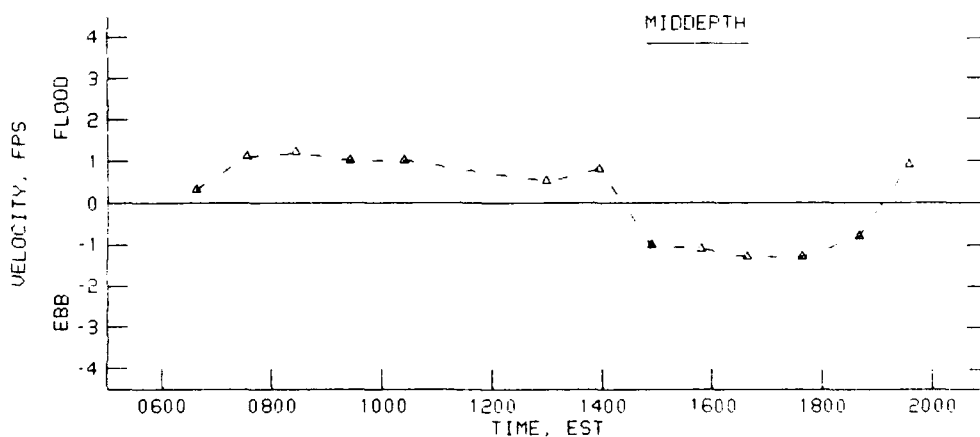
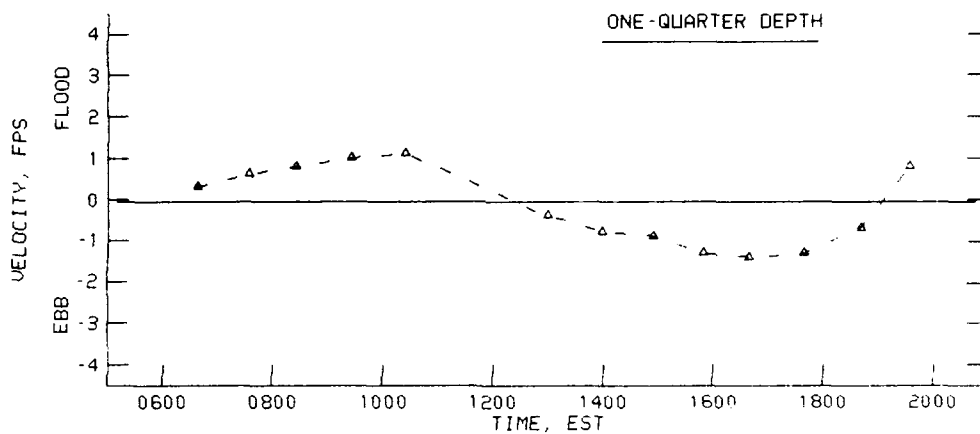
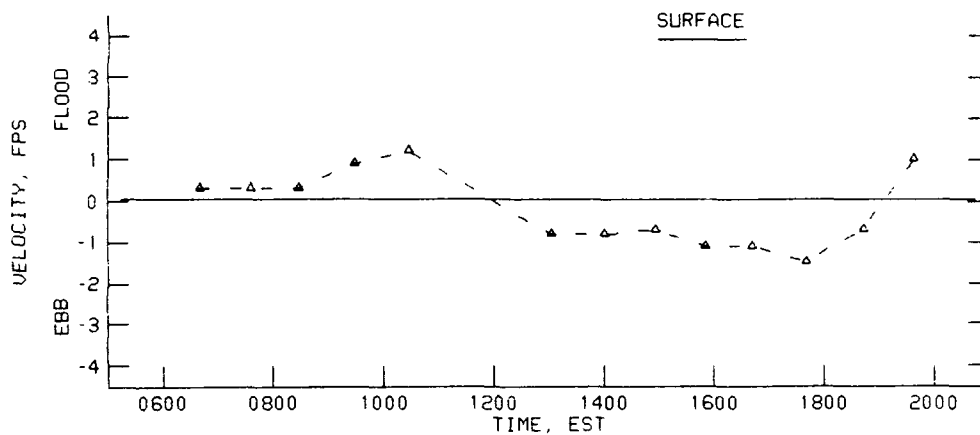


**VELOCITIES AT STATION R3.0B
SURFACE, ONE-QUARTER DEPTH,
AND MIDDEPTH**

5 NOVEMBER 1990

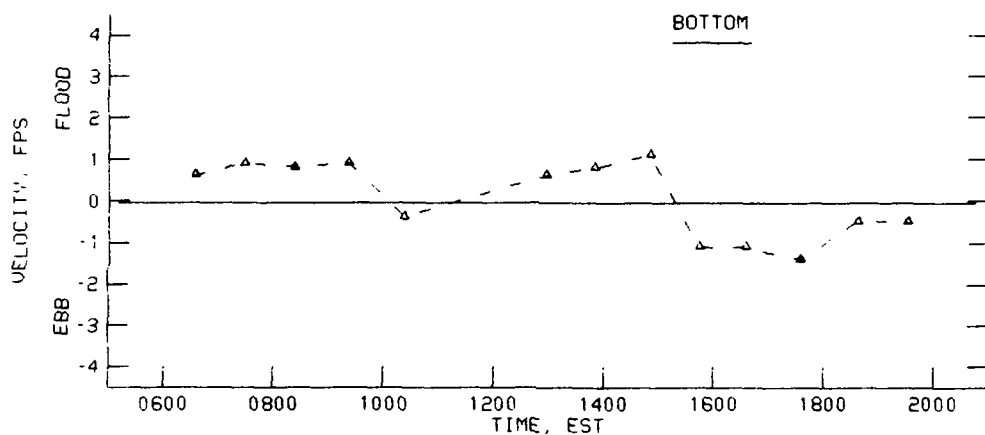
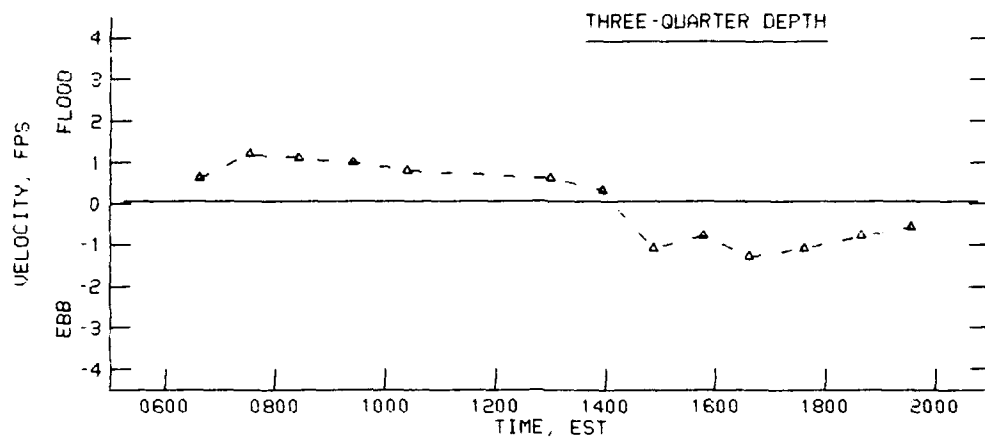


**VELOCITIES AT STATION R3.0B
THREE-QUARTER DEPTH AND BOTTOM
5 NOVEMBER 1990**

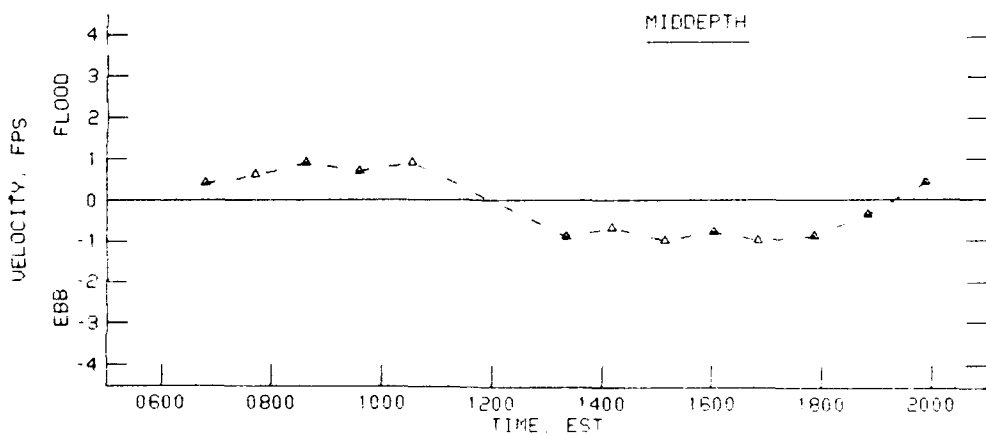
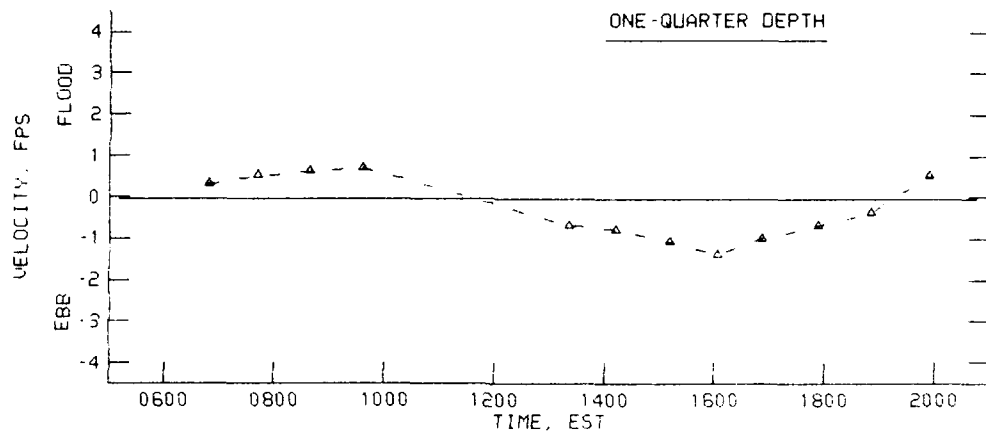
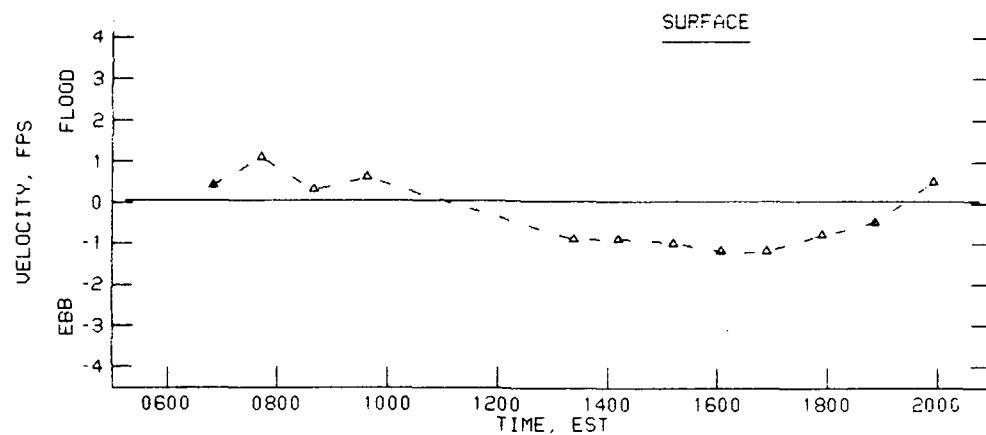


**VELOCITIES AT STATION R3.0C
SURFACE, ONE-QUARTER DEPTH,
AND MIDDEPTH**

5 NOVEMBER 1990

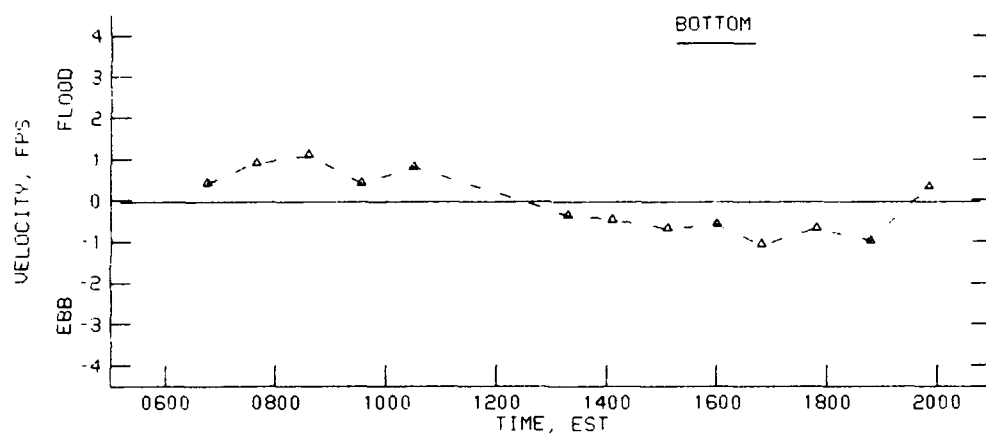
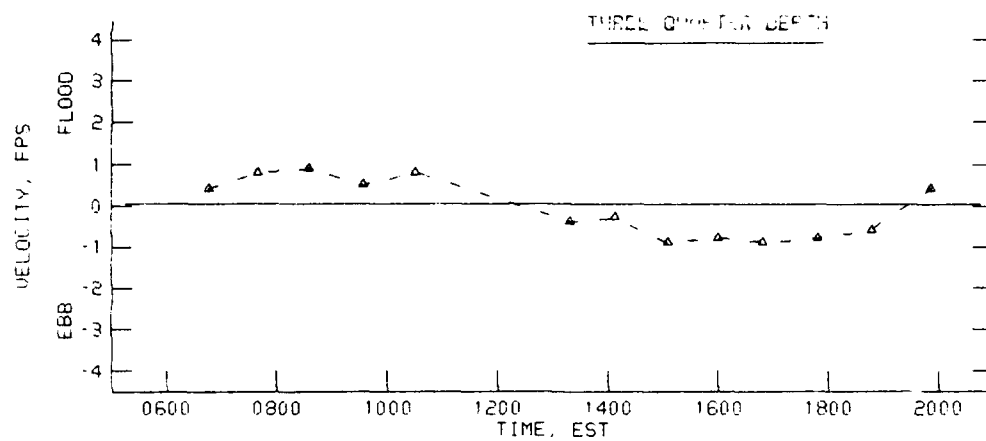


**VELOCITIES AT STATION R3.0C
THREE-QUARTER DEPTH AND BOTTOM
5 NOVEMBER 1990**

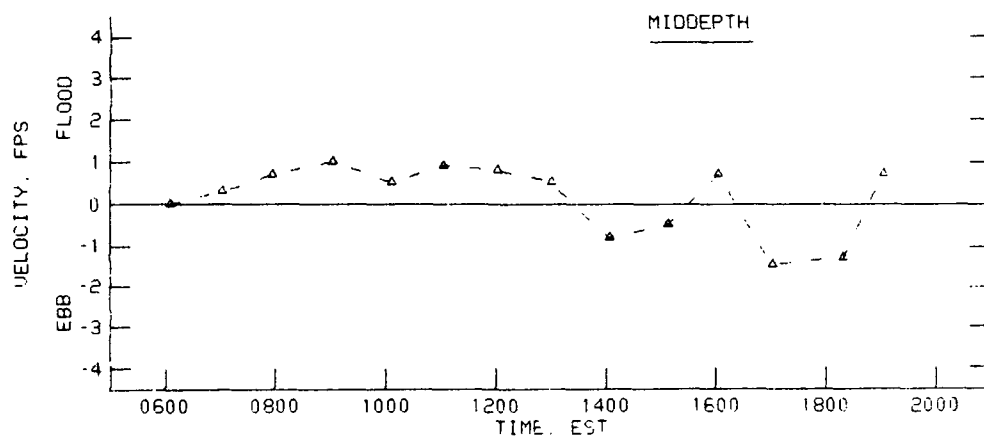
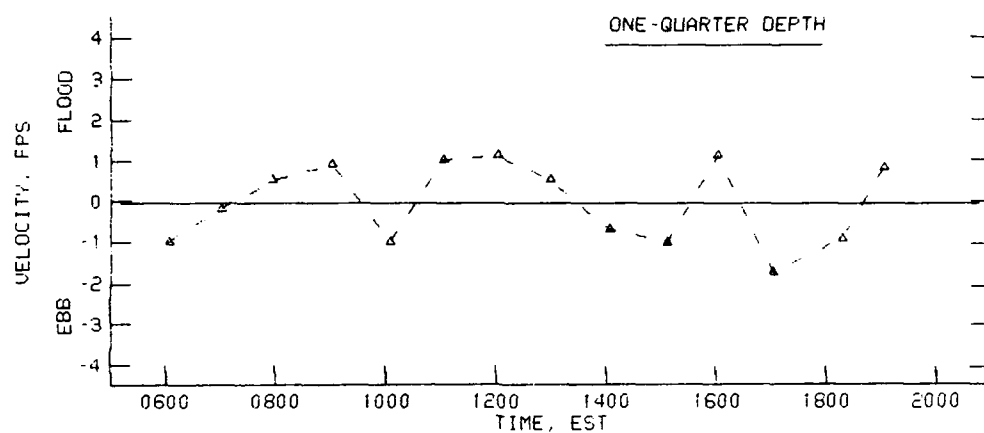
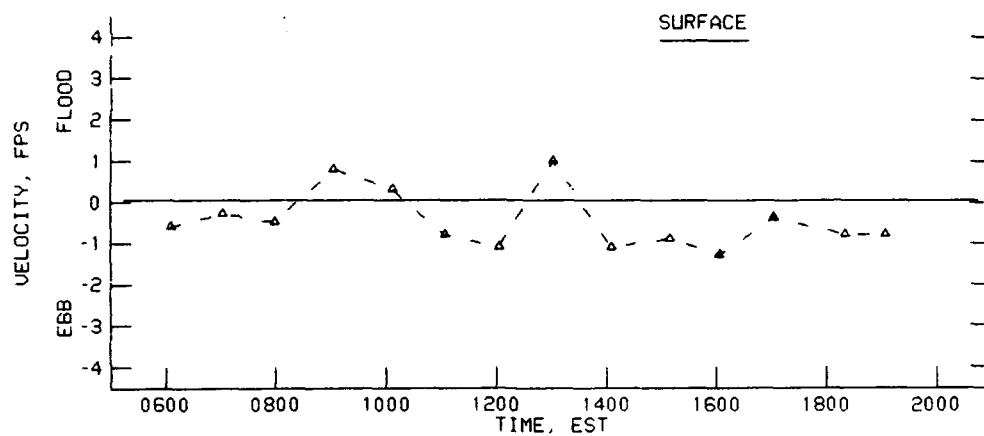


**VELOCITIES AT STATION R3.0D
SURFACE, ONE-QUARTER DEPTH,
AND MIDDEPTH**

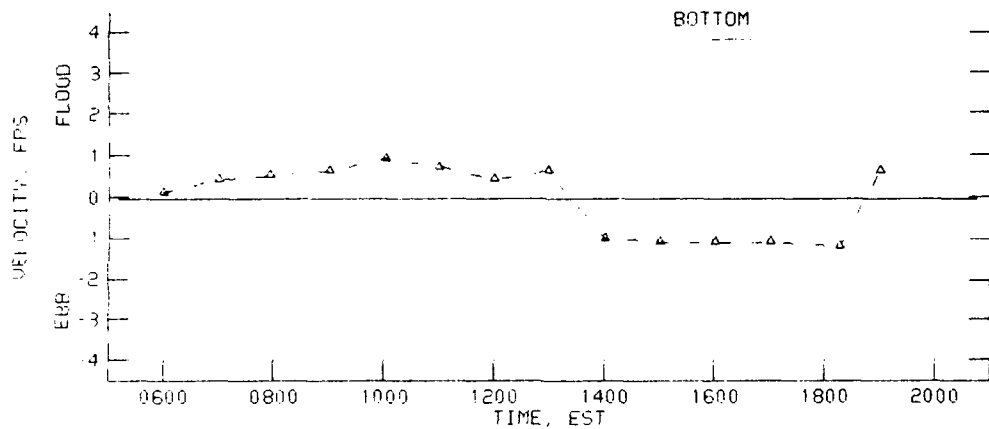
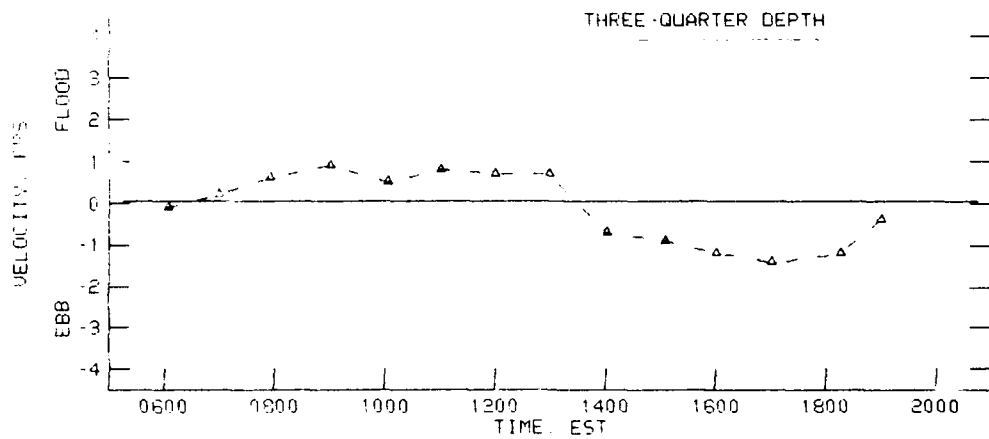
5 NOVEMBER 1990



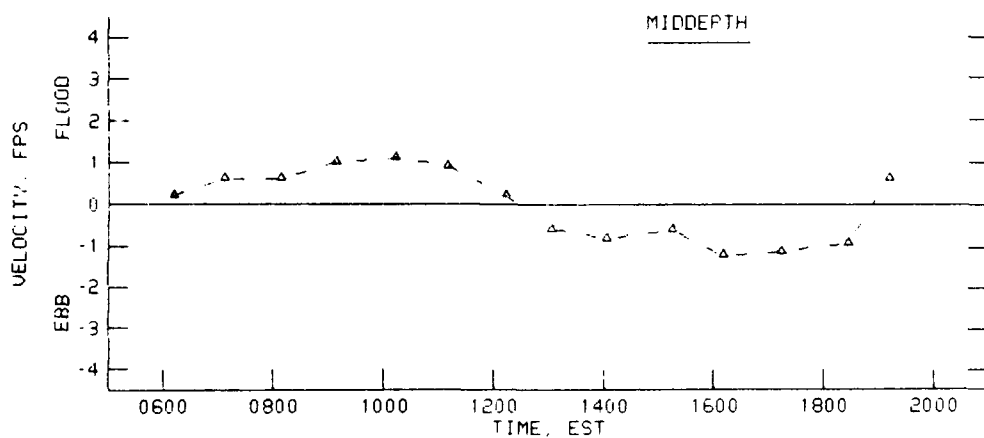
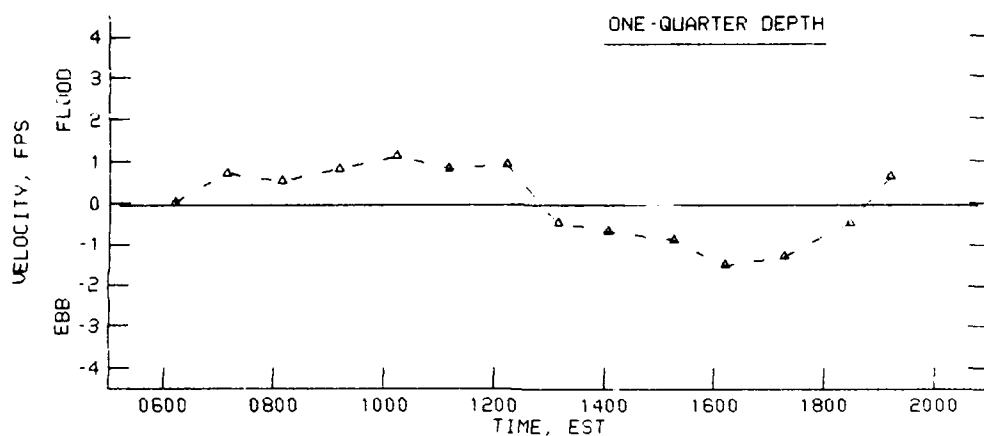
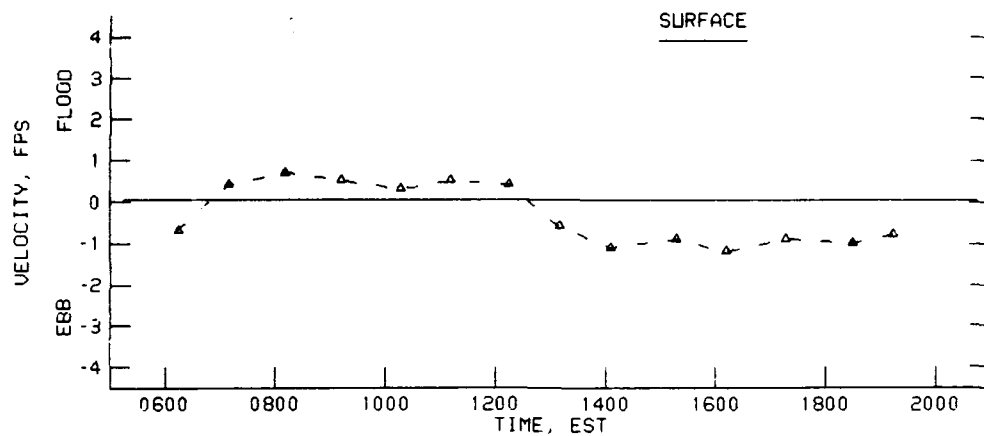
VELOCITIES AT STATION R3.0D
THREE-QUARTER DEPTH AND BOTTOM
5 NOVEMBER 1990



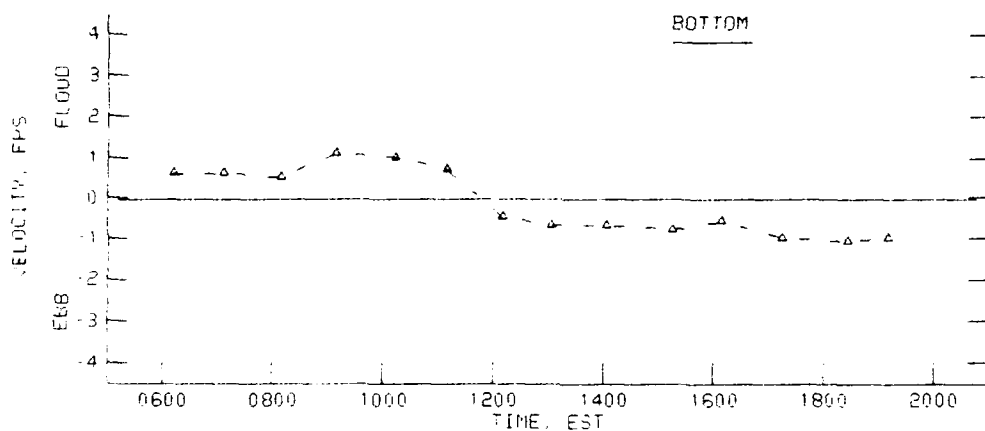
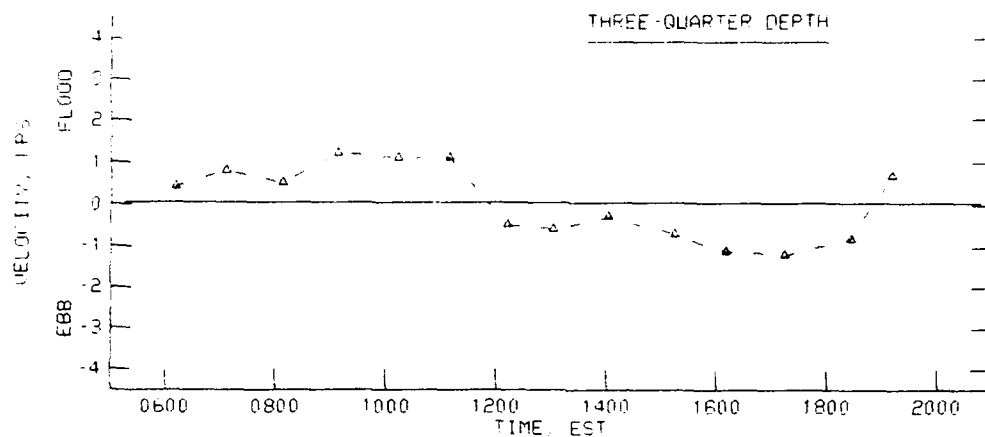
**VELOCITIES AT STATION R4.0B
SURFACE, ONE-QUARTER DEPTH,
AND MIDDEPTH
5 NOVEMBER 1990**



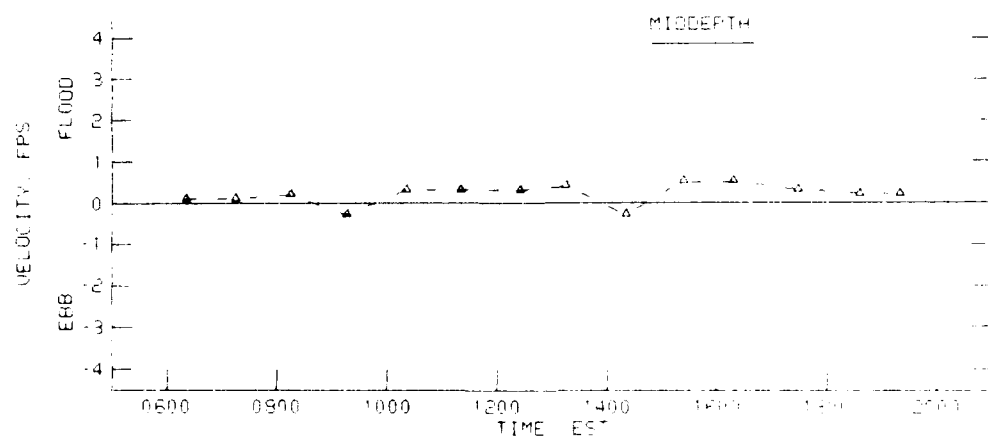
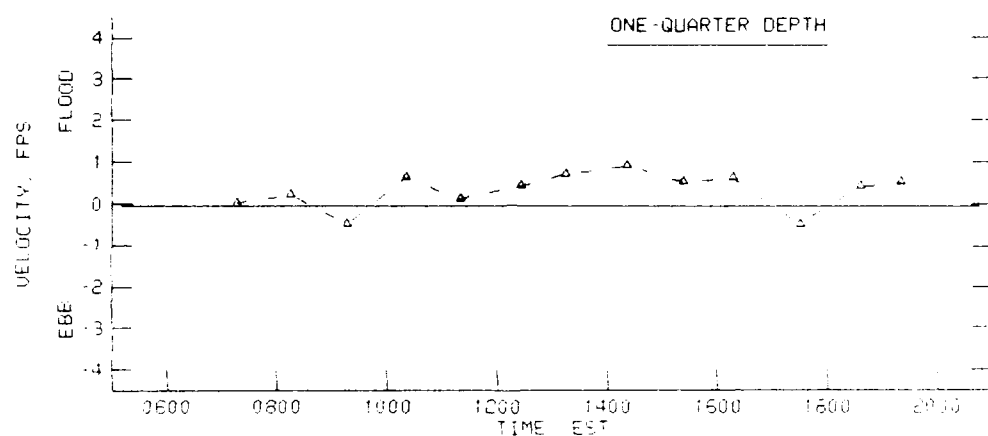
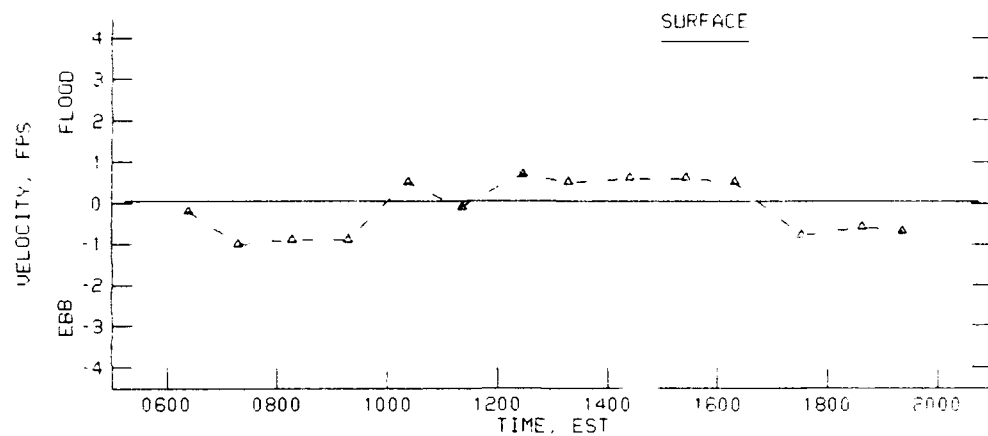
VELOCITIES AT STATION R4.0B
THREE-QUARTER DEPTH AND BOTTOM
5 NOVEMBER 1990



VELOCITIES AT STATION R5.0B
SURFACE, ONE-QUARTER DEPTH,
AND MIDDEPTH
5 NOVEMBER 1990

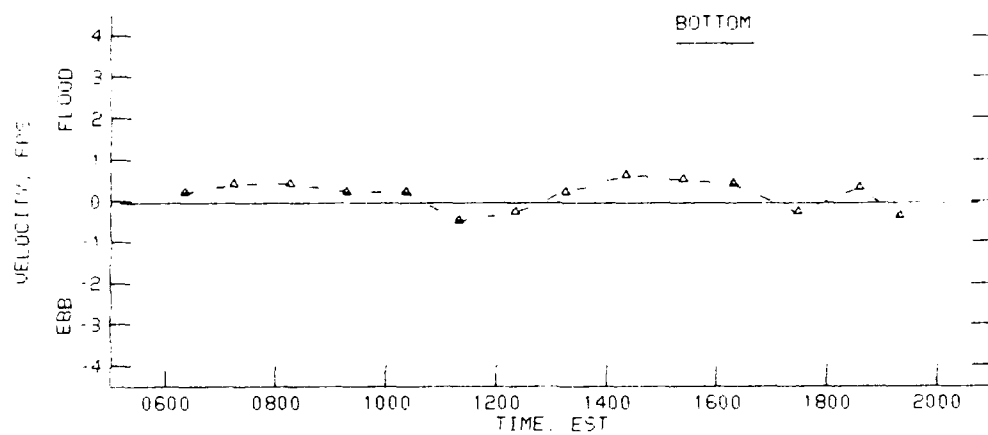
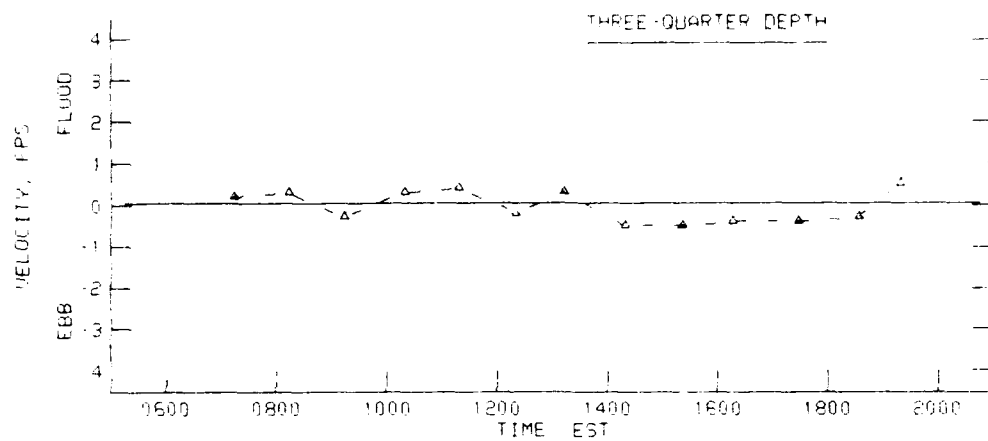


**VELOCITIES AT STATION R5.0B
THREE-QUARTER DEPTH AND BOTTOM
5 NOVEMBER 1990**

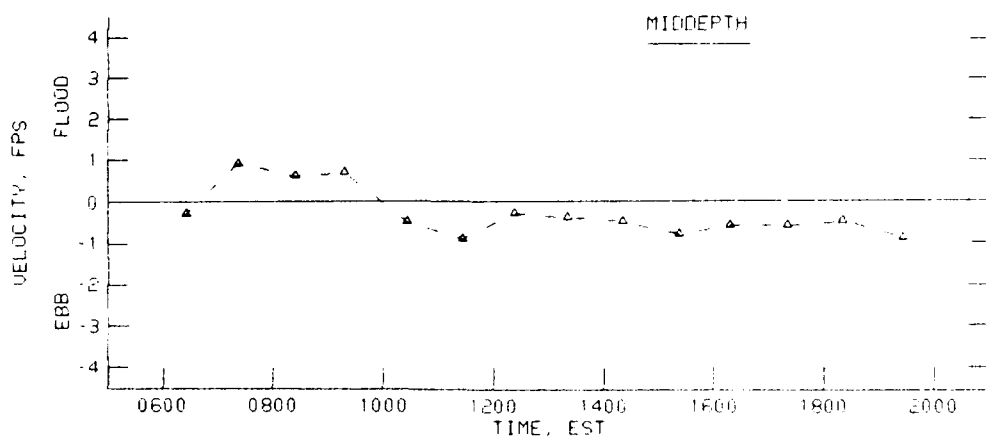
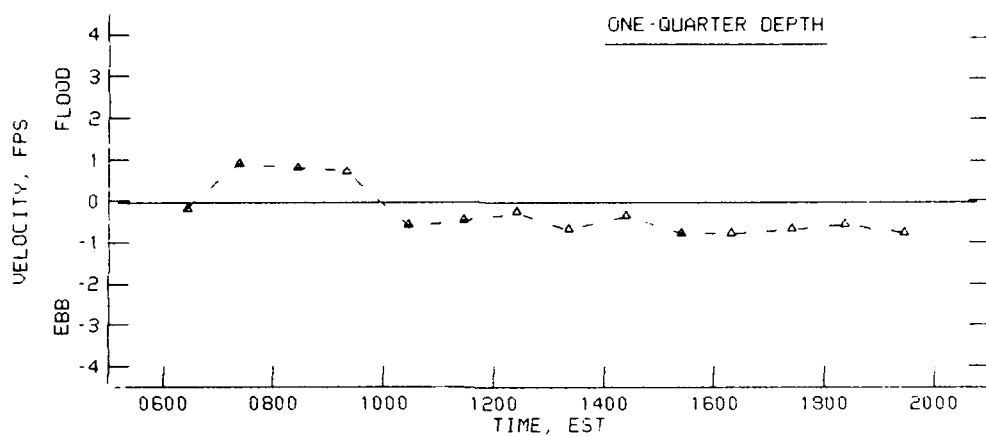
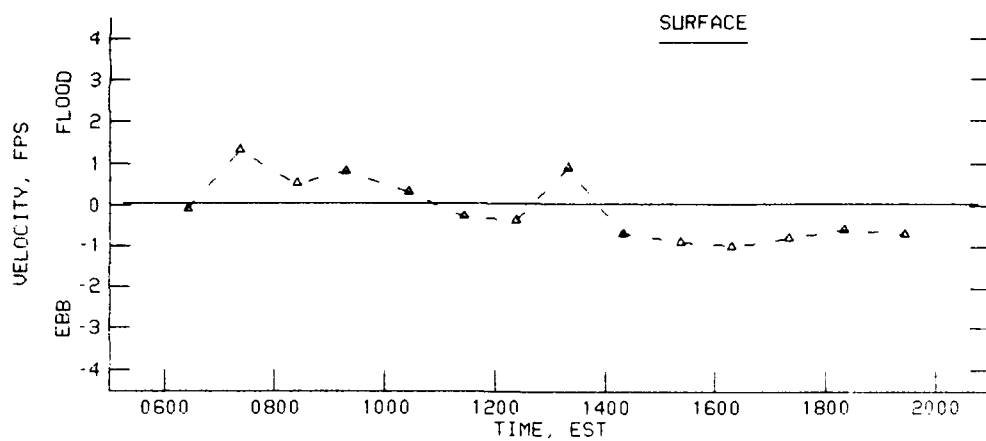


**VELOCITIES AT STATION R6.0B
SURFACE, ONE-QUARTER DEPTH,
AND MIDDEPTH**

5 NOVEMBER 1990

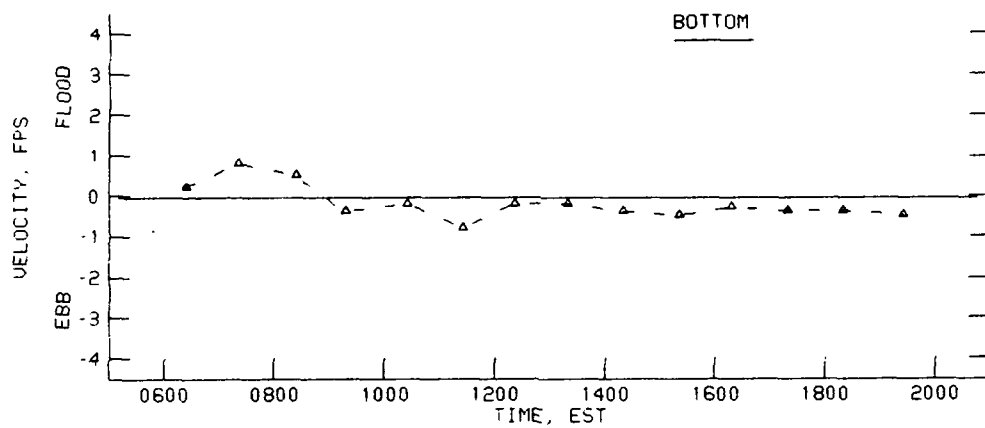
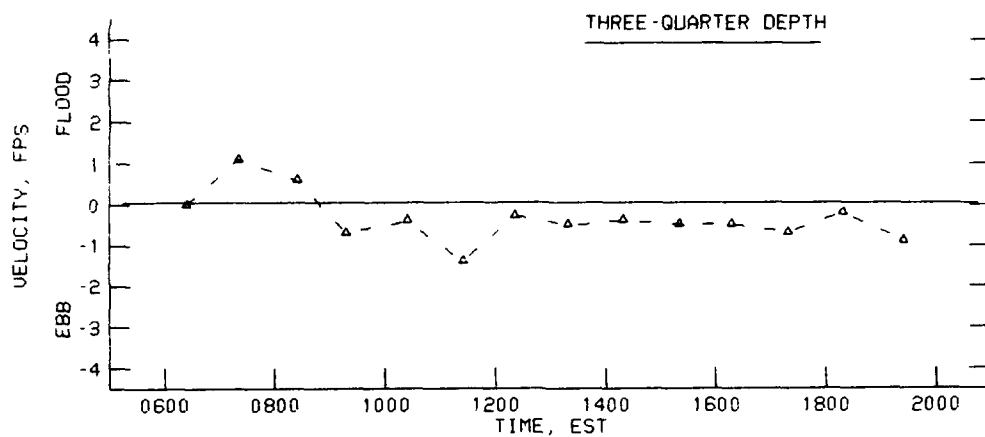


VELOCITIES AT STATION R6.0B
THREE-QUARTER DEPTH AND BOTTOM
5 NOVEMBER 1990

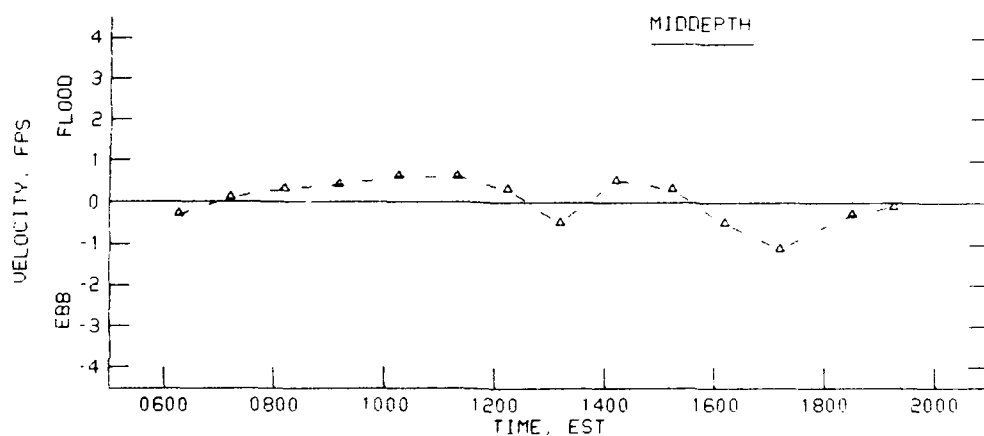
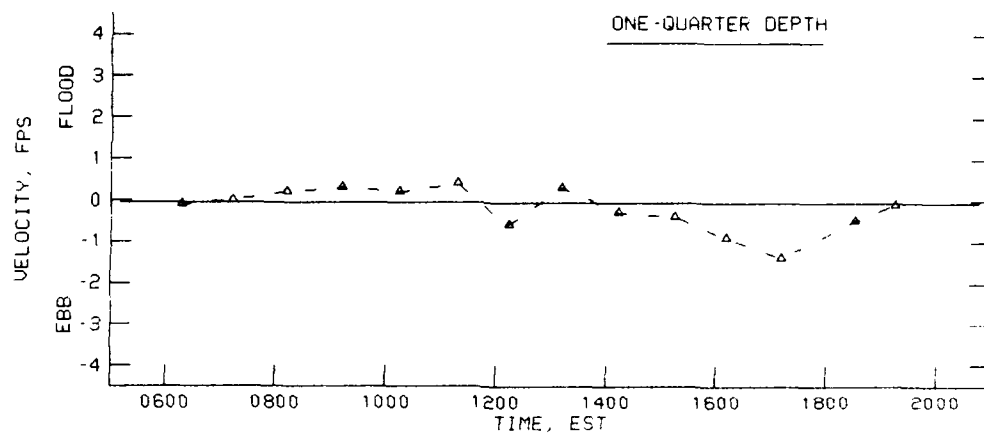
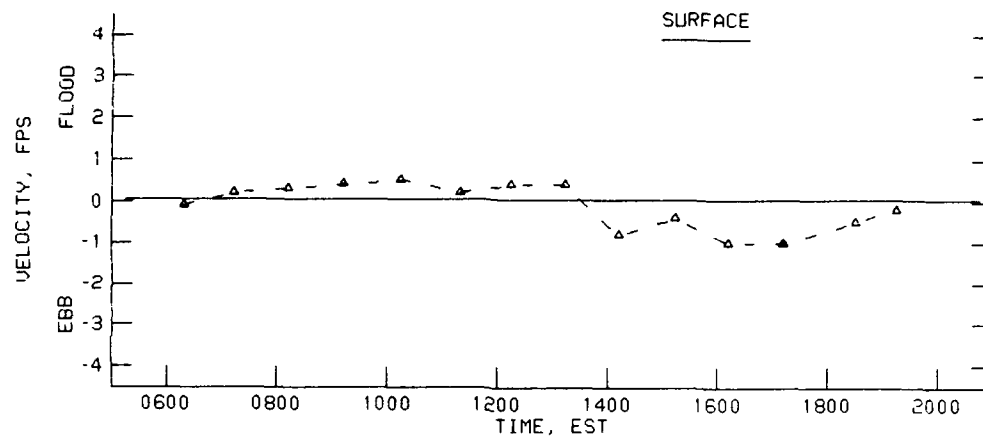


**VELOCITIES AT STATION R7.0B
SURFACE, ONE-QUARTER DEPTH,
AND MIDDEPTH**

5 NOVEMBER 1990

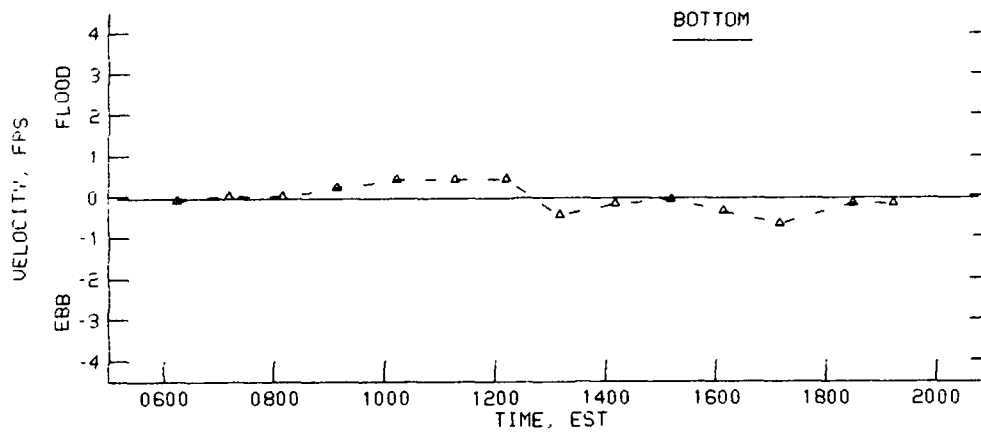
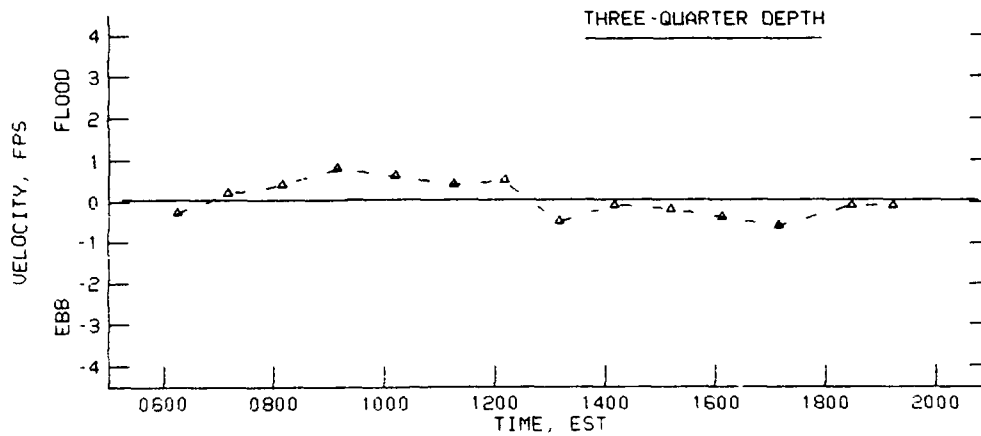


**VELOCITIES AT STATION R7.0B
THREE-QUARTER DEPTH AND BOTTOM
5 NOVEMBER 1990**

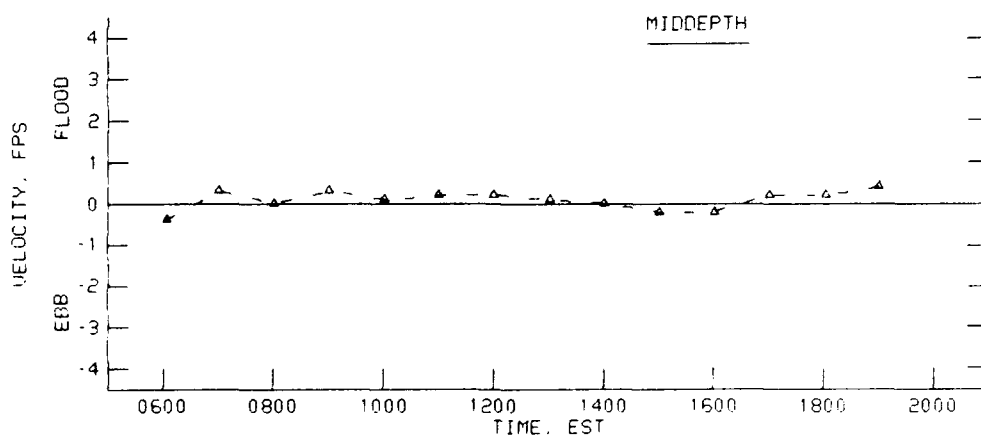
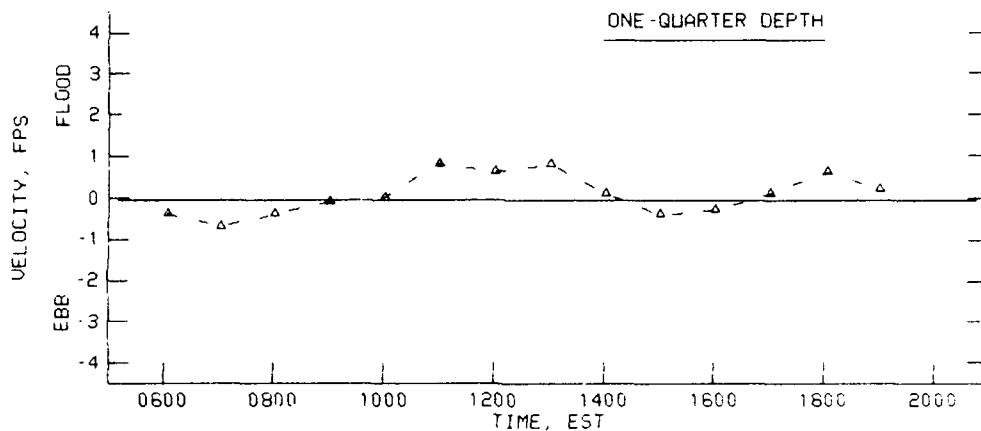
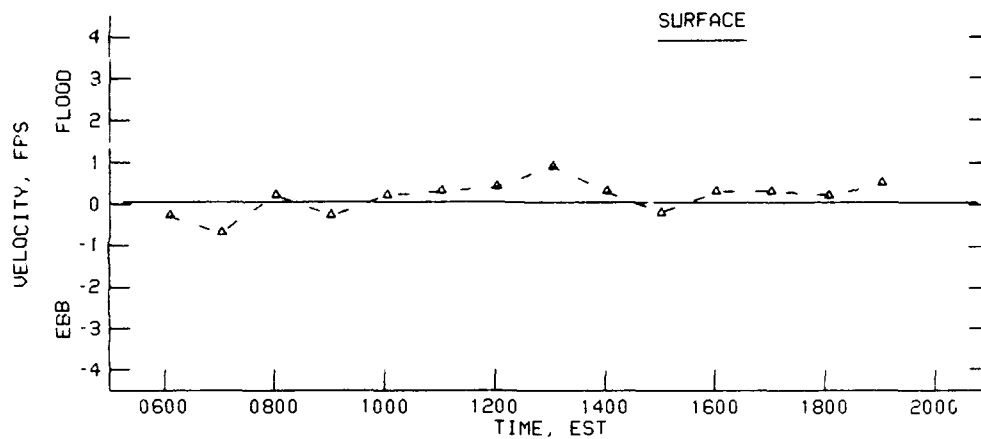


**VELOCITIES AT STATION R8.0B
SURFACE, ONE-QUARTER DEPTH,
AND MIDDEPTH**

5 NOVEMBER 1990

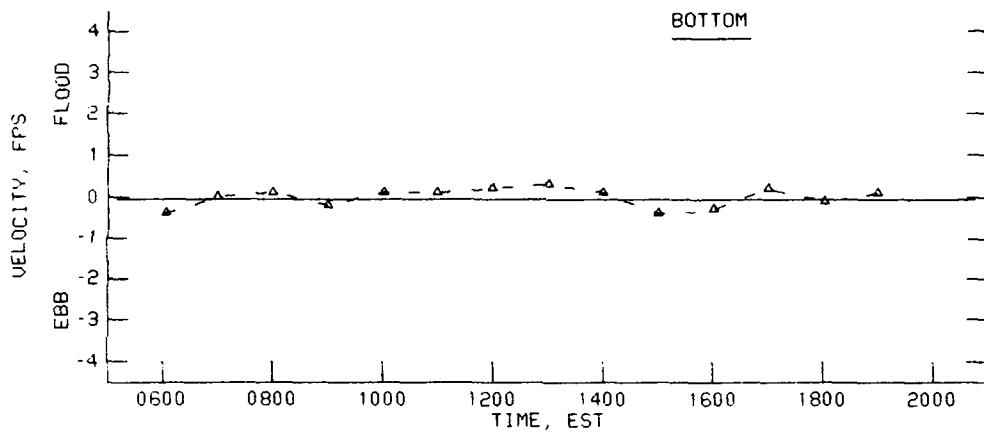
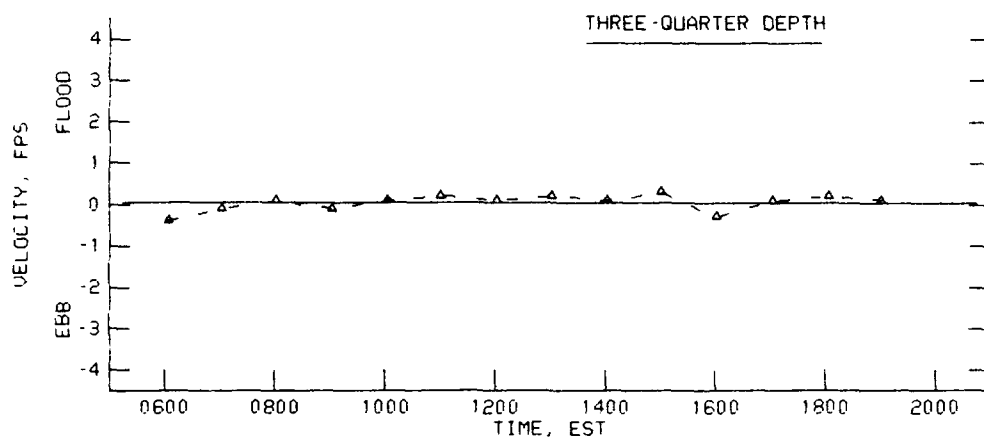


**VELOCITIES AT STATION R8.0B
THREE-QUARTER DEPTH AND BOTTOM
5 NOVEMBER 1990**

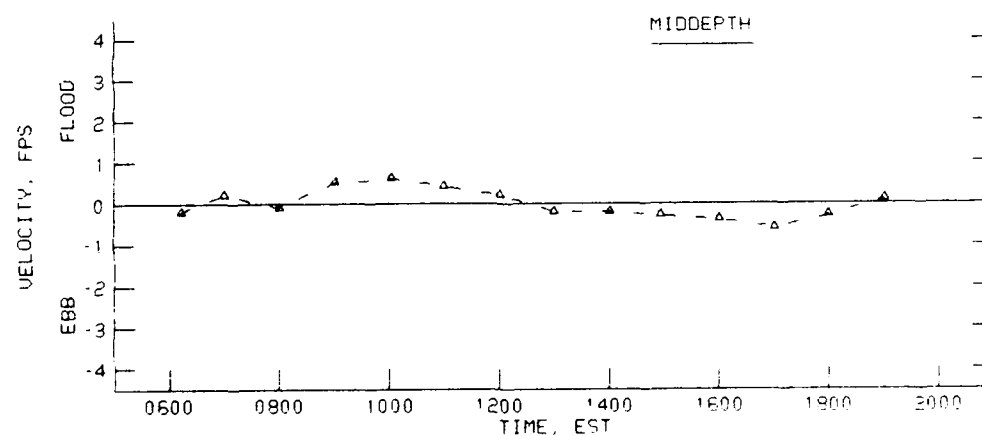
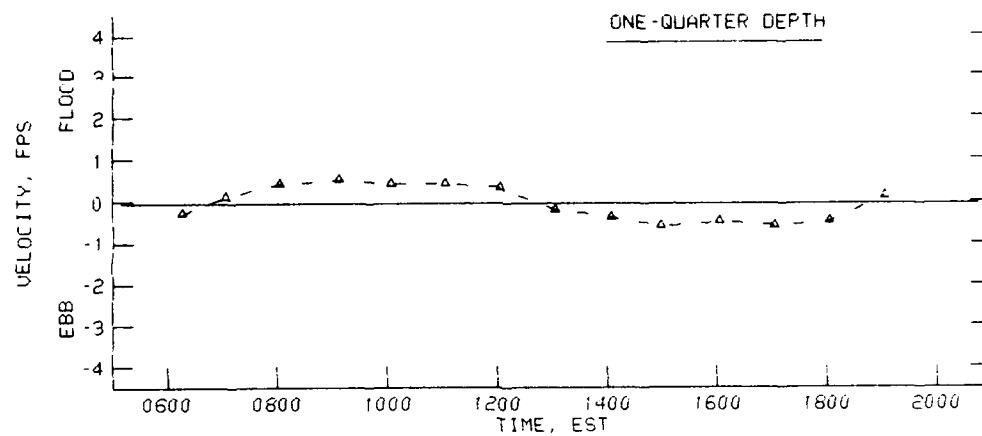
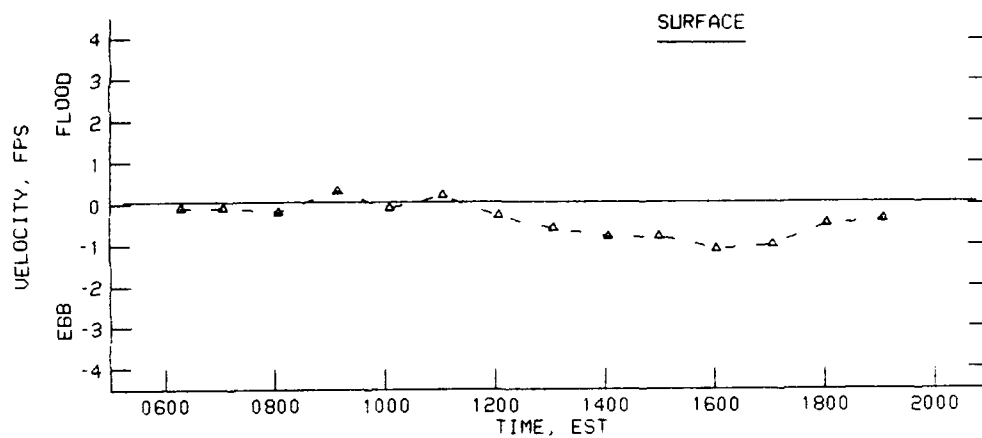


**VELOCITIES AT STATION R9.0B
SURFACE, ONE-QUARTER DEPTH,
AND MIDDEPTH**

5 NOVEMBER 1990

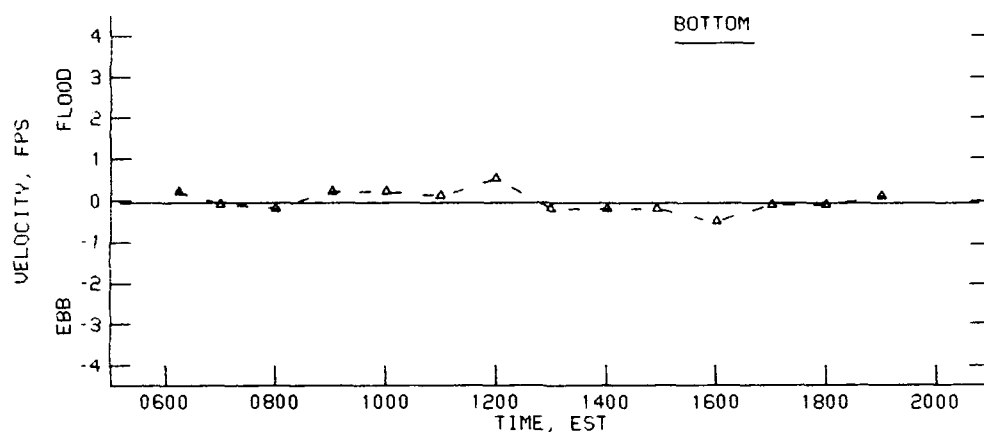
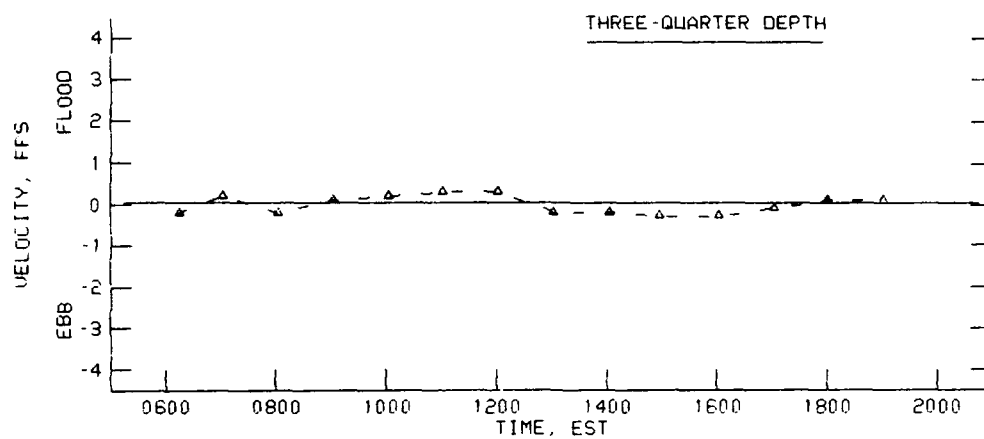


VELOCITIES AT STATION R9.0B
THREE-QUARTER DEPTH AND BOTTOM
5 NOVEMBER 1990

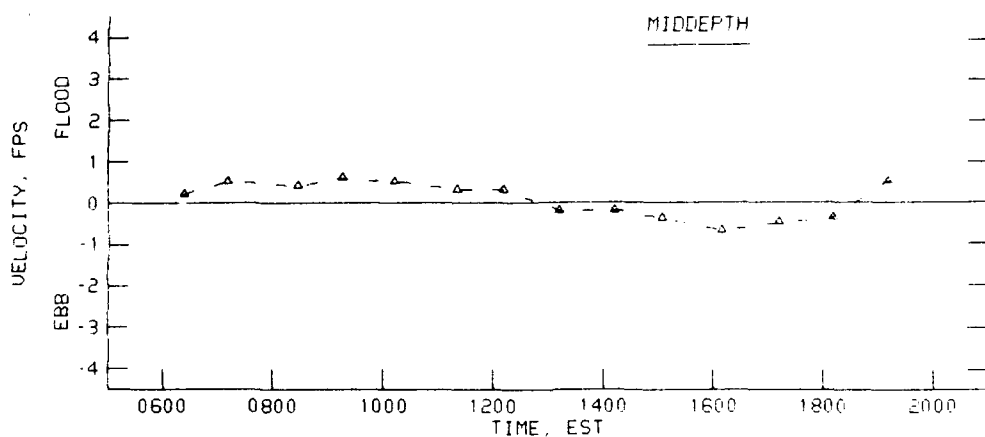
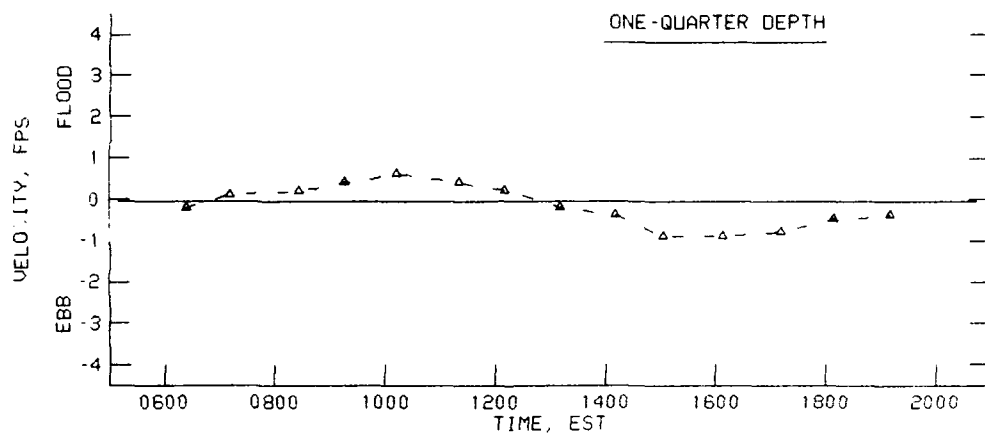
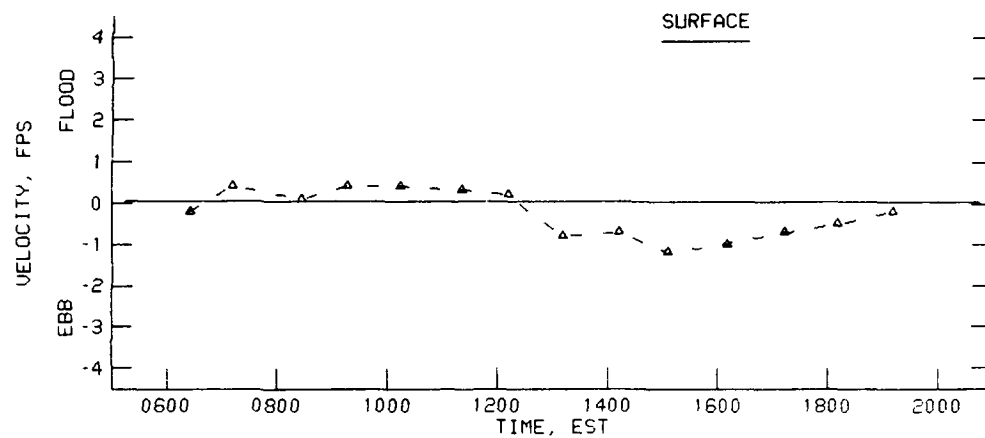


**VELOCITIES AT STATION R10.0B
SURFACE, ONE-QUARTER DEPTH,
AND MIDDEPTH**

5 NOVEMBER 1990

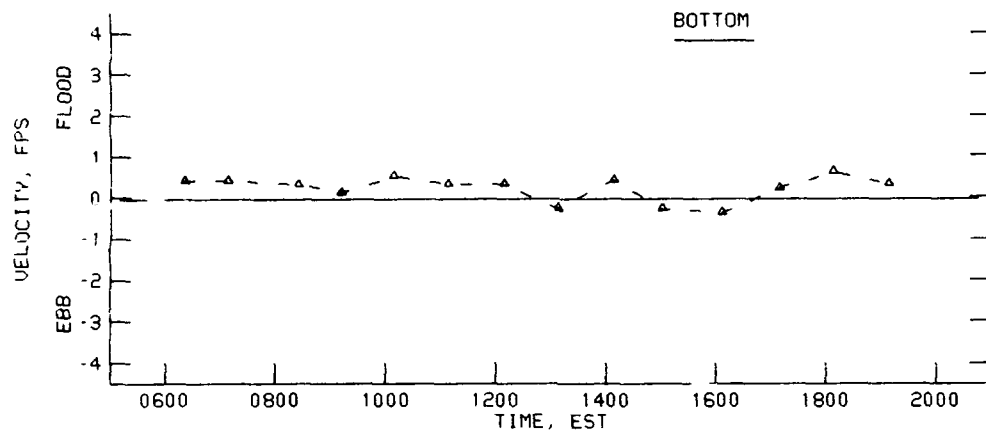
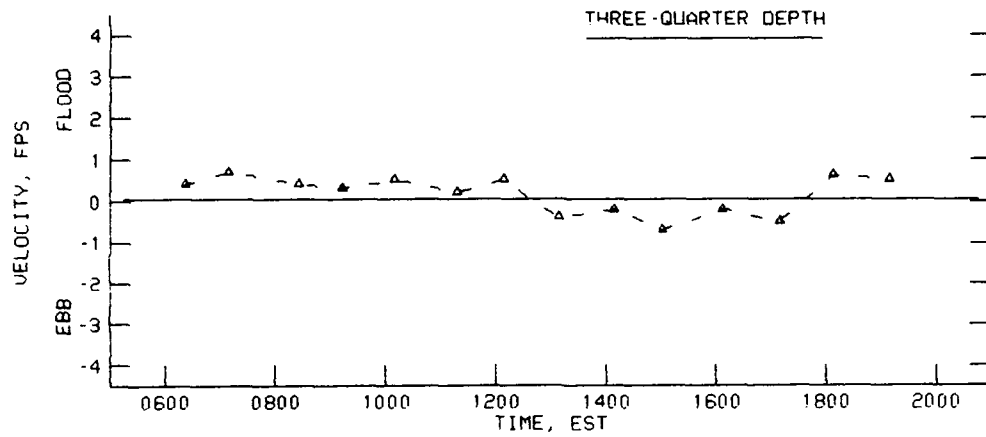


VELOCITIES AT STATION R10.0B
THREE-QUARTER DEPTH AND BOTTOM
5 NOVEMBER 1990

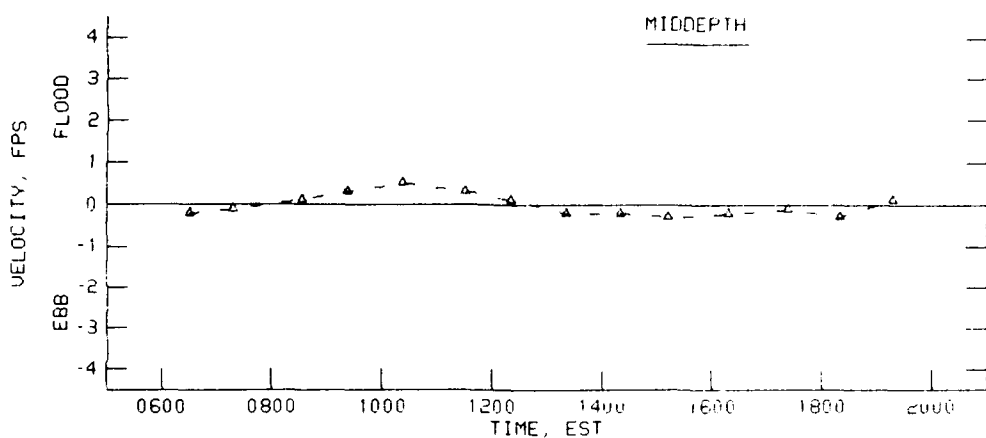
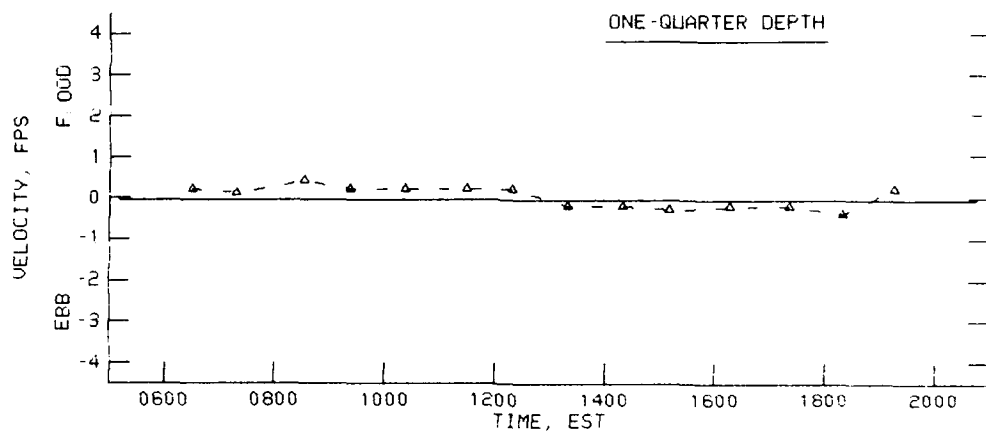
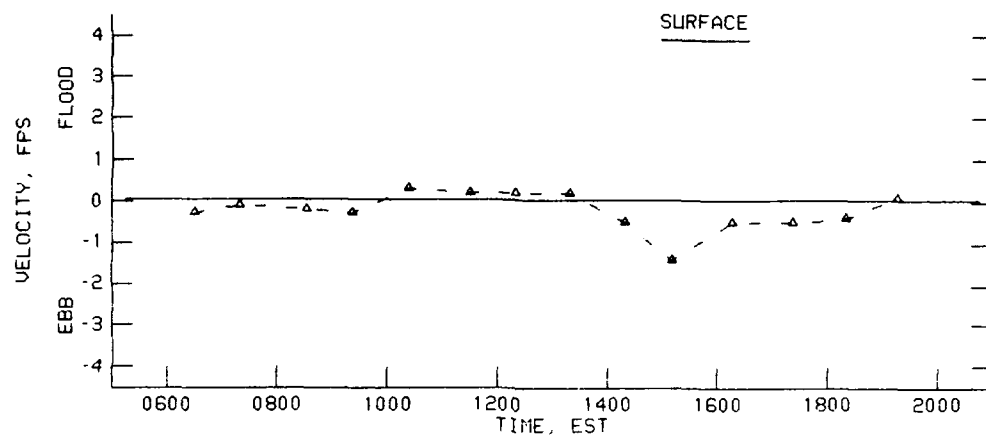


**VELOCITIES AT STATION R11.0B
SURFACE, ONE-QUARTER DEPTH,
AND MIDDEPTH**

5 NOVEMBER 1990

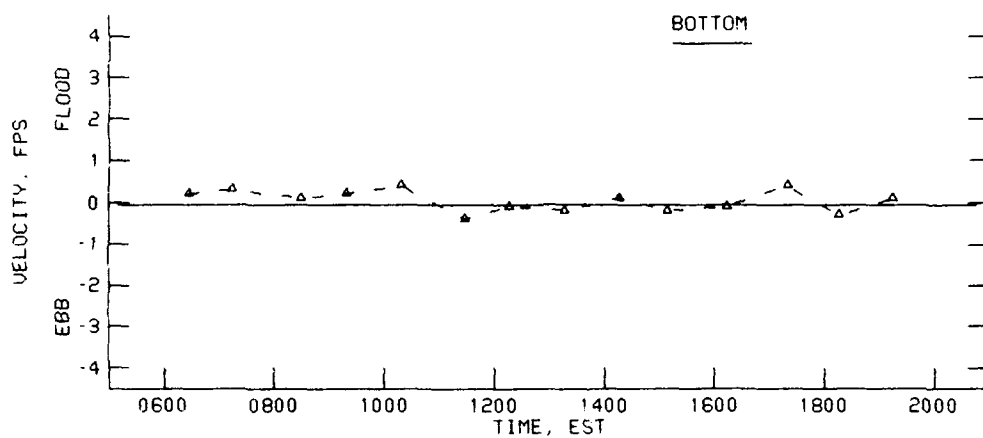
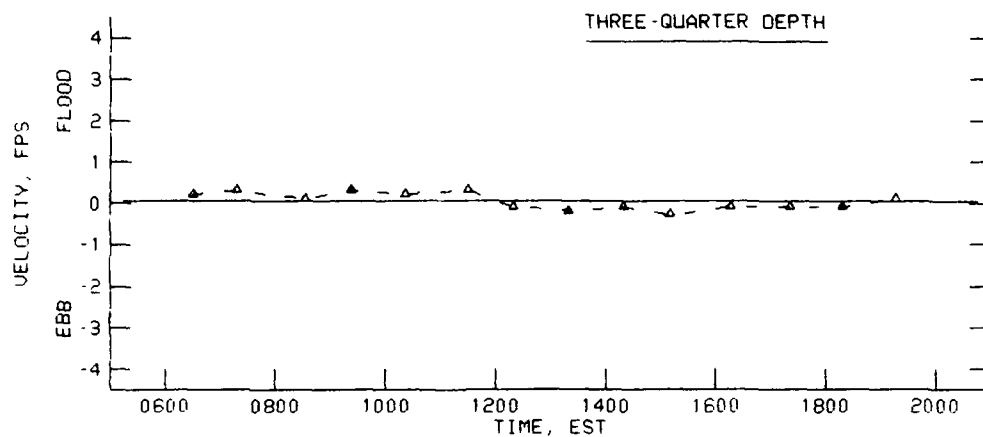


**VELOCITIES AT STATION R11.0B
THREE-QUARTER DEPTH AND BOTTOM
5 NOVEMBER 1990**



**VELOCITIES AT STATION R12.0B
SURFACE, ONE-QUARTER DEPTH,
AND MIDDEPTH**

5 NOVEMBER 1990



VELOCITIES AT STATION R12.0B
THREE-QUARTER DEPTH AND BOTTOM

5 NOVEMBER 1990